Central South Consortium
Consortiwm Canolbarth y De
Joint Education Service
Gwasanaeth Addysg ar y Cyd

EAS
Education Achievement Service
for South East Wales
Gwasanaeth Cyflawni Addysg
i Dde Ddwyrain Cymru

ERW
Ein Rhanbarth ar Waith
Education through Regional Working
www.erw.org.uk

GwE
Tuag at Ragoriaeth
Towards Excellence

Teacher assessment

Key stages 2 and 3

# Mathematics: learner profile

# Level 5

## Foreword

This profile is intended to help teachers see the type of evidence that can be used to take to a cluster meeting, in order to support the best-fit judgements made. It also clearly demonstrates that the evidence predominantly lies in a pupil's book and hence is what is already available to the teacher.

The profile also includes a detailed commentary which provides clarity on why the best-fit judgment was awarded. There is no suggestion or expectation that a learner profile is produced for every pupil in the cohort or that teachers write such an extensive commentary.

# Learner Profile Mathematics Level 5

8-9-14

L.O: To use and apply place value

1. 3502 = 3000 ✓✓
2. 7321 = 300 ✓✓
3. 43,062 = 3000 ✓✓
4. 39,540 = 30,000 ✓✓
5. 305,642 = 300,000 ✓✓
6. 630,790 = 30,000 ✓✓
7. 7456 ✓✓
8. 2902 ✓✓
9. 547,492 ✓✓
10. 92,404 ✓✓
11. 6,065,400 ✓✓
12. 7409 ✓✓
13. 10,350 ✓✓
14. 293,161 ✓✓
15. 164,050 ✓✓
16. 6,000,007 ✓✓
17. Seven thousand and one ✓✓
18. five thousand and ninety. ✓✓
19. eight thousand and three hundred. ✓✓

20. two hundred and seven thousand and one. ✓✓

21. five hundred and ninety-four thousand and ninety. ✓✓

22. five million, eight hundred and seventy thousand, and three hundred. ✓✓

23. ten million, three hundred and sourty-five thousand, three hundred and two. ✓✓

24. 4 hundreds ✓✓

25. 41 hundreds? 4 thousands

26. 20, 345 - smallest two million, three hundred and
54, 320 - biggest ✓✓ sixty-four thousand

27. 2, 362, 800 - smallest
8, 763, 200 - biggest ✓✓

28. 3642 = 3000 + 600 + 40 + 2 ✓✓

29. 5967 = 5000 + 900 + 60 + 7 ✓✓

30. 4529 = 4000 + 500 + 20 + 9 ✓✓

31. 1398 = 1000 + 300 + 90 + 8 ✓✓

✓✓ Gwaith da
A good understanding of place value.

Can you write q26 and q27 in words?

26
twenty thousand, three hundred and sorty five - smallest

sixty-four thousand, three hundred and twenty

9-9-14

LO: Multiply numbers and decimals by 10, 100 and 1000.

1. $34 \times 10 = 340$ ✓✓
2. $51 \times 100 = 5100$ ✓✓
3. $530 \times 10 = 5300$ ✓✓
4. $3120 \times 10 = 31,200$ ✓✓
5. $4501 \times 100 = 450,100$ ✓✓
6. $43,980 \times 10 = 439,800$ ✓✓
7. $3.2 \times 10 = 32$ ✓✓
8. $5.4 \times 100 = 5400$ ✓✓
9. $4.2 \times 1000 = 4200$ ✓✓
10. $3.87 \times 10 = 38.7$ ✓✓
11. $4.81 \times 100 = 481$ ✓✓
12. $0.8 \times 10 = 8$ ✓✓
13. $0.5 \times 100 = 50$ ✓✓
14. $0.04 \times 10 = 0.4$ ✓✓
15. $0.08 \times 100 = 8$ ✓✓
16. $0.82 \times 100 = 82$ ✓✓
17. $0.34 \times 10 = 3.4$ ✓✓
18. $7.3 \times 10 = 73$ ✓✓
19. $3.1 \times 100 = 310$ ✓✓

20. 10 x 45 = 450 ₩

21. 10 x 420 = 4200 ₩

22. 1000 x 56 = 56,000 ₩

23. 9 x 400 = 6300 ₩

Ardderchog ! Great multiplication.

24. 8 x 60 = 480 ₩

25. 70 x 5 = 350 ₩

26. 300 x 4 = 1200 ₩

27. 200 x 7 = 1400 ₩

28. 20 x 30 = 600 ₩

29. 30 x 400 = 12,000 ₩

30. 40 x 700 = 28,000 ₩

31. 50 x 900 = 45,000 ₩

32. 0.4 x 40 = 16 ₩

33. 0.6 x 90 = 54 ₩

34. 0.4 x 20 = 8 ₩

35. 0.3 x 300 = 90 ₩

36. 0.2 x 400 = 80 ₩

37. 0.6 x 300 = 180 ₩

10-10-2014

LO - Divide numbers and decimals by 10, 100 and 1000

1. 3÷10=0.3 ✓✓
2. 7÷100=0.07 ✓✓
3. 6÷1000=0.006 ✓✓
4. 39÷10=3.9 ✓✓
5. 41÷100=0.41 ✓✓
6. 52÷1000=0.052 ✓✓
7. 459÷10=45.9 ✓✓
8. 310÷100=3.10 ✓✓
9. 501÷100=5.01 ✓✓
10. 5500÷10=550 ✓✓
11. 3942÷10=394.2 ✓✓
12. 3600÷100=36 ✓✓
13. 8001÷100=80.01 ✓✓
14. 8200÷1000=8.200 ✓✓
15. 9003÷1000=9.003 ✓✓
16. 7260÷100=72 ✓✓
17. 3900÷10=390 ✓✓
18. 72,000÷1000=72 ✓✓

Bendigedig
Nod gyfleuon.

15-9-2014

LO- To use the expanded and compact method of addition

1.) 46780 + 3883 ✓

3
160
1500
9000
40000
50663

2.) 50053 + 59096

9 ✓
140
000
9000
100000
109149

3.) 83471 ✓ + 2973

4
140
1300
50000
80000
86444

4.) 95046 ✓ + 44958

14
90
900
9000
130000
140004

5.) 50391 ✓ + 9768

59
150
1000
9000
50000
60159

6.) 77204 ✓ + 3884

81088

7.) 91365 ✓ + 79758

181123

8.) 86172 + 75096

161268 ✓

9.) 10000 ✓ + 9008

19008

10.) 60040 ✓ + 50090

111130

✓ Great addition using the expanded and compact methods

Da ian

• Self-assessed using calculator

16.9.14

LO - To subtract using the compact method

1. $\begin{array}{r} {}^{4}\cancel{5}\,{}^{9}\cancel{0}\,{}^{15}8\,{}^{1}7 \\ -\ 1\,0\,6\,8 \\ \hline 3\,9\,9\,9 \end{array}$

$\begin{array}{r} 1\,0\,6\,8 \\ +\ 3\,9\,9\,9 \\ \hline 5\,0\,6\,7 \\ \hline {\scriptstyle 1\ 1\ 1} \end{array}$ ✓✓

2. $\begin{array}{r} {}^{3}4\,{}^{1}3\,{}^{8}\cancel{8}\,{}^{1}4 \\ -\ \ 6\,7\,7 \\ \hline 3\,7\,1\,7 \end{array}$

$\begin{array}{r} 3\,7\,1\,7 \\ +\ \ 6\,7\,7 \\ \hline 4\,3\,9\,4 \\ \hline {\scriptstyle 1\ \ 1} \end{array}$ ✓✓

3. $\begin{array}{r} {}^{7}\cancel{8}\,{}^{1}1\,{}^{15}\cancel{8}\,{}^{1}5 \\ -\ 3\,9\,8\,6 \\ \hline 4\,2\,7\,9 \end{array}$

$\begin{array}{r} 4\,2\,7\,9 \\ +\ 3\,9\,8\,6 \\ \hline 8\,2\,6\,5 \\ \hline {\scriptstyle 1\ 1\ 1} \end{array}$ ✓✓

4. $\begin{array}{r} {}^{5}7\,{}^{1}\cancel{6}\,{}^{1}3\,9 \\ -\ \ 5\,4\,5 \\ \hline 7\,0\,9\,4 \end{array}$

$\begin{array}{r} 7\,0\,9\,4 \\ +\ \ 5\,4\,5 \\ \hline 7\,6\,3\,9 \\ \hline {\scriptstyle 1} \end{array}$ ✓✓

5. $\begin{array}{r} 8\,{}^{14}\cancel{9}\,{}^{1}\cancel{5}\,{}^{1}5\,8 \\ -\ 2\,9\,9\,6 \\ \hline 6\,5\,6\,2 \end{array}$

$\begin{array}{r} 6\,5\,6\,2 \\ +\ 2\,9\,9\,6 \\ \hline 9\,5\,5\,8 \\ \hline {\scriptstyle 1\ 1} \end{array}$ ✓✓

✓ Gwaith da
NOD Cyflawni.

17.9.14

LO- To multiply HTU x U and TU x TU using the grid method.

1.) 34 x 9 = 306

| X | 30 | 4 |
|---|---|---|
| 9 | 270 | 36 |

270 + 36 = 306 //

2.) 45 x 8 = 360

| X | 40 | 5 |
|---|---|---|
| 8 | 320 | 40 |

320 + 40 = 360 //

3.) 36 x 10 = 360

| X | 30 | 6 |
|---|---|---|
| 10 | 300 | 60 |

300 + 60 = 360 //

4.) 47 x 11 = 517

| X | 40 | 7 |
|---|---|---|
| 10 | 400 | 70 |
| 1 | 40 | 7 |

400 + 70 + 40 + 7 = 517 //

5.) 26 x 12 = 330

| X | 20 | 6 |
|---|---|---|
| 10 | 200 | 60 |
| 2 | 40 | 30 |

200 + 60 + 40 + 30 = 330 ?

6.) 54 x 12 = 648

| x | 50 | 4 |
|---|---|---|
| 10 | 500 | 40 |
| 2 | 100 | 8 |

500
+100
40
8
648

7.) 177 x 9 = 1593

| x | 100 | 70 | 7 |
|---|---|---|---|
| 9 | 900 | 630 | 63 |

900
+630
63 ✓✓
1593

8.) 187 x 8 = 1496

| x | 100 | 80 | 7 |
|---|---|---|---|
| 8 | 800 | 640 | 56 |

800
+640
56 ✓✓
1496

9.) 288 x 9 = 2592

| x | 200 | 80 | 8 |
|---|---|---|---|
| 9 | 1800 | 720 | 72 |

1800
720
+ 72
2592 ✓✓

10.) 388 x 7 = 2716

| x | 300 | 80 | 8 |
|---|---|---|---|
| 7 | 2100 | 560 | 56 |

2100
+560
56
2716 ✓✓

Bendigedig
Super multiplication using the grid method.

22-9-14

LO- To multiply HTU x TU using the grid method.

1. 406
x 35

| X | 400 | 0 | 6 |
|---|---|---|---|
| 30 | 12000 | 0 | 180 |
| 5 | 2000 | 0 | 30 |

12000 ✓
+ 2000
180
30
0
0
14210

1

2. 308
x 25

| X | 300 | 0 | 8 |
|---|---|---|---|
| 20 | 6000 | 0 | 160 |
| 5 | 1500 | 0 | 40 |

6000 ✓
+ 1500
160
40
0
0
7700

1

3. 607
x 25

| X | 600 | 0 | 7 |
|---|---|---|---|
| 20 | 12000 | 0 | 140 |
| 5 | 3000 | 0 | 35 |

12000 ✓
+ 3000
140
35
0
0
15175

4. 568
× 34

| × | 500 | 60 | 8 |
|---|---|---|---|
| 30 | 15000 | 1800 | 240 |
| 4 | 2000 | 240 | 32 |

15000 ✓
2000
1800
240
240
32
19312
1 1

5. 736
× 43

| × | 700 | 30 | 6 |
|---|---|---|---|
| 40 | 28000 | 1200 | 240 |
| 3 | 2100 | 90 | 18 |

28000 ✓
2100
1200
240
90
18
31648
1 1

6. 584
× 36

| × | 500 | 80 | 4 |
|---|---|---|---|
| 30 | 15000 | 2400 | 120 |
| 6 | 3000 | 480 | 24 |

15000 ✓
3000
2400
480
120
24
21024
1 1 1

7. 478
× 45

| X | 400 | 70 | 8 |
|---|---|---|---|
| 40 | 16000 | 2800 | 320 |
| 5 | 2000 | 350 | 40 |

16000 ✓
+ 2800
2000
350
320
40
21510

Sdy assessed with a calculator

✓✓ Ardderchog NOD Gyflawni!

23.9.14

Lo-To multiply using the compact method.

1.) 867 ✓
× 7
6069
44

2.) 749 ✓
× 11
749
7490
8239
1 1

3.) 788 ✓
× 9
7092
77

4.) 939 ✓
× 12
1878
1
9390
11,268
1 1

5.) 849 ✓
× 11
849
8490
9339
1 1

6.) 699 ✓
× 12
1398
1 1
6990
8388
1 1

1.) 132 ✓
× 21
132
2640
2772

2.) 242 ✓
× 21
242
4840
5082
1

3.) 314 ✓
× 21
314
6280
6594

4.) 424 ✓
× 21
424
8480
8904
1

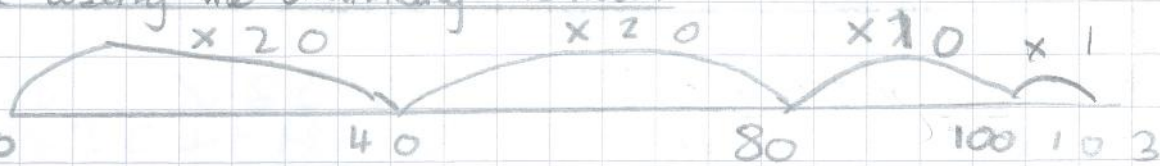
5.) 522 ✓
× 31
522
15660
16182
1

✓ Super multiplication using the compact method well done

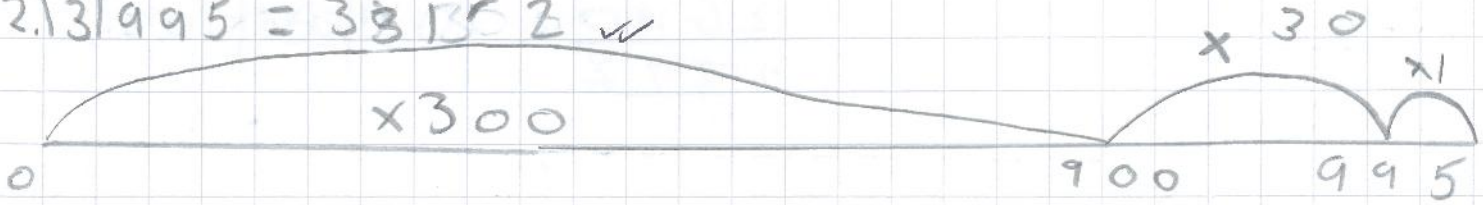
24-9-14

LO- To divide using the chunking method.

1.) 2|103 = 51 r 1 ✓✓



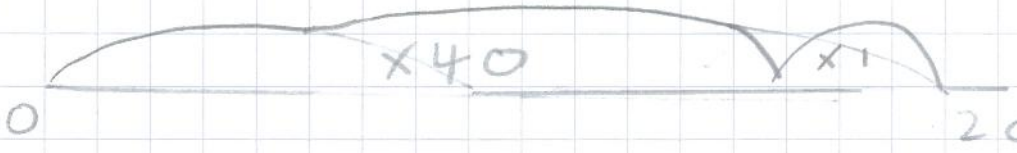

2.) 3|995 = 331 r 2 ✓✓



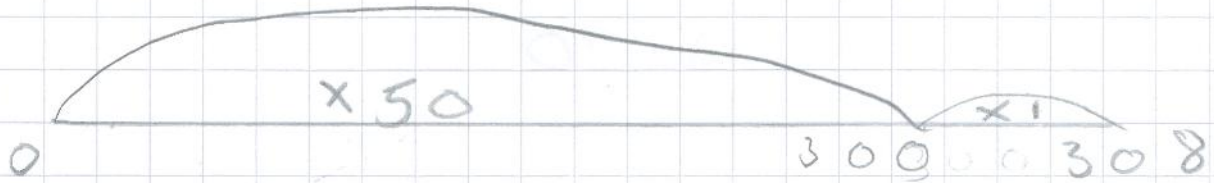

3.) 4|206 = 51 r 2 ✓✓




4.) 5|207 = 41 r 2 ✓✓




5.) 6|308 = 51 r 2 ✓✓




6.) 3|900 = 300 ✓✓



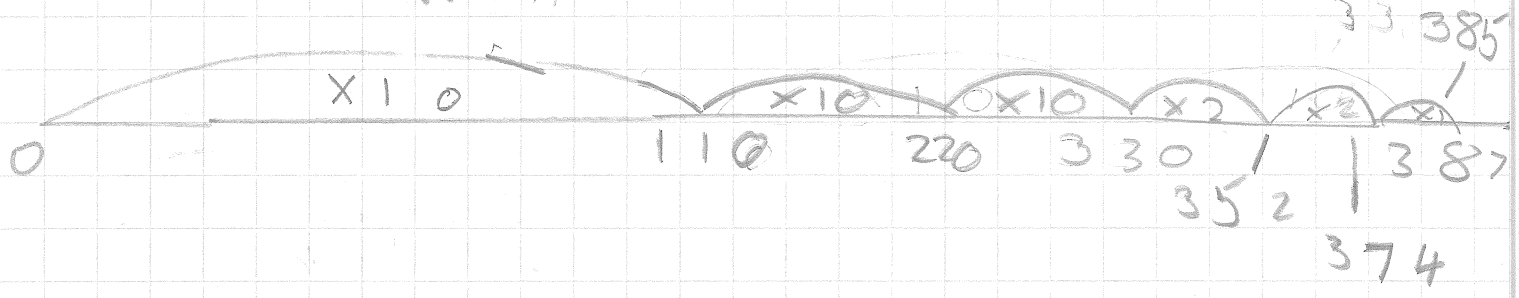

✓✓

Super division using the chunking method. Well done.

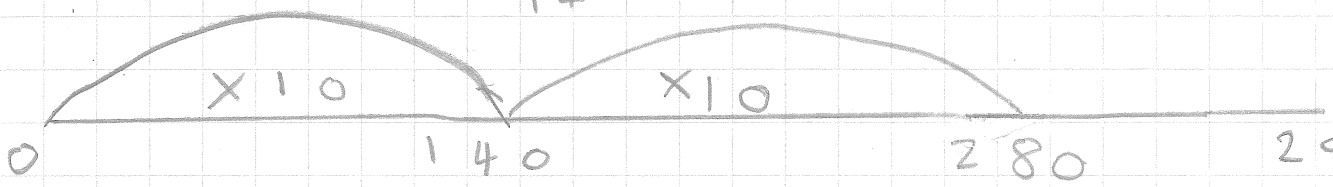
25-9-14

LO - To divide using the chunking method

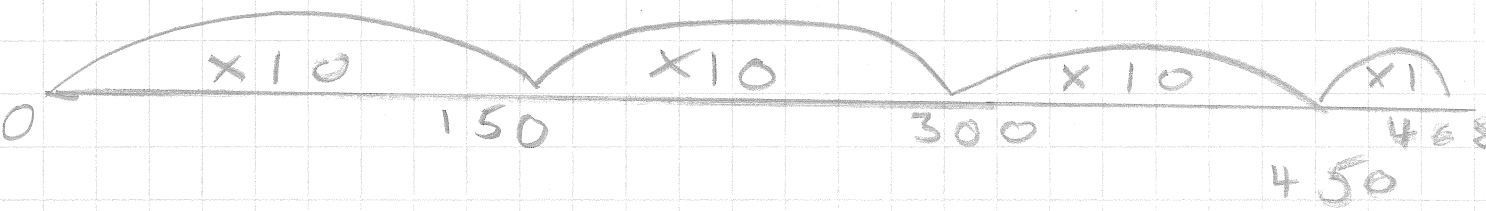
1.) 11|387 = 35 7/11 ✓✓



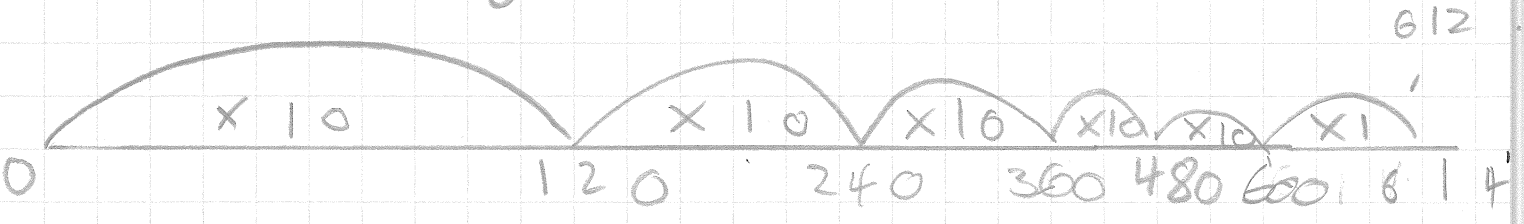

2.) 14|291 = 20 11/14 ✓✓



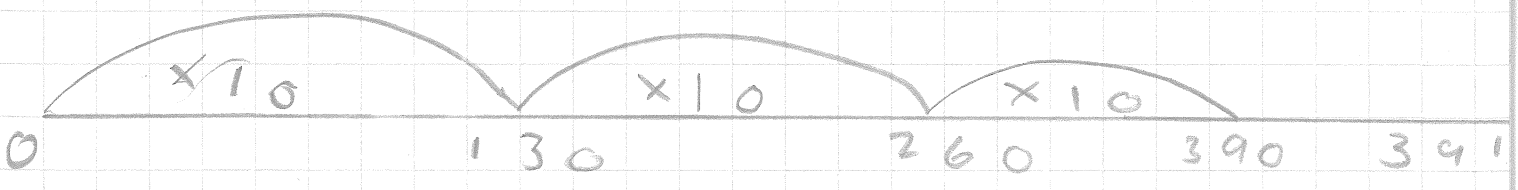

3.) 45|468 31 1/5 ✓✓



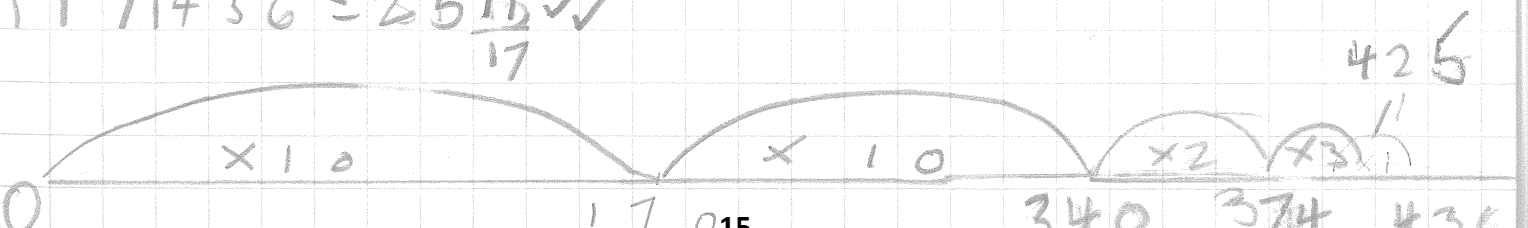

4.) 12|614 51 1/6 ✓✓



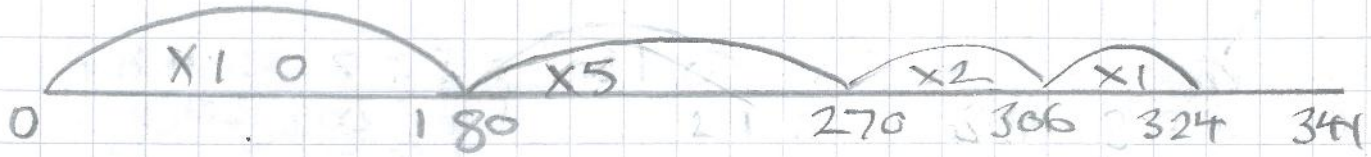

5.) 13|391 = 30 1/13 ✓✓




6.) 17|436 = 25 11/17 ✓✓



7, 18 ⟌ 341 = 18 17/18 ✓✓




Self assessed

?

you can do it!

✓✓ Great division by 2 digits using the chunking method.

29-9-14

40-1 to divide using the chunking method.

1. 12|456 = 38
- 240 (20x)
216
- 120 (10x) ✓✓
96
- 96 (8x)
0

2. 11|888 = 58
- 550 (50x)
338
- 220 (20x)
118
- 88 (8x)
30

3. 13|689 = 53
- 260 (20x)
429
- 260 (20x)
169
- 130 (10x)
39
- 26 (2x) ✓✓
13
- 13 (1x)

4. 11|924 = 12
- 880 (80x) ?
44
- 44 (4x)
0

✓✓ Da iawn.

5. 13|507 = 48 3/13
- 260 (20x)
367
- 260 (20x) ?
107
- 52 (4x)
55
- 52 (4x)
3

6. 12|876 = 73
- 720 (60x)
156
- 120 (10x) ✓✓
36
- 36 (3x)
0

7. 13|871 = 67 ✓✓
- 390 (30x)
481
- 260 (20x)
221
- 130 (10x)
91
- 65 (5x)
26
- 26 (2x)
0

8. 36|468 = 14 4/36
- 360 (10x)
108
- 72 (2x) ?
36
- 72 (2x)
4

Can you look at Q4 and Q5 again please.

Take care with your calculations

9.1 + 30-9-14

LO - To use the compact method to subtract and add decimals

1) £5.83 + £9.49 = £15.32 ✓✓

£15.32 − £9.49 = £5.83

2) £17.55 + £14.02 = £31.57 ✓

£31.57 − £14.02 = £17.55

3) £10.78 + £22.22 = £33.00 ✓✓

£33.00 − £22.22 = £10.78

4) £96.65 + £0.61 = £97.26

£97.26 − £0.61 = £97.87 ×

5) £64.71 + £50.30 = £115.01 ✓✓

£115.01 − £50.30 = £64.71

6) £81.26 + £41.37 = £122.63 ✓✓

£122.63 − £41.37 = £81.26

7) £484.39 + £93.85 = £578.24 ✓✓

£578.24 − £93.85 = £484.39

8) £154.06 + £113.72 = £267.78 ✓✓

£267.78 − £113.72 = £154.06

9.) £138.28 £241.84 ✓✓
+£103.56 -£103.56
£241.84 138.28

10.) £292.04 £503.03 ✓✓
+£210.99 -£210.99
£503.03 292.04

Good try ! wrong but well done.

9/10 well done!.

✓✓ Ardderchog
Excellent subtraction and addition of decimals.

* Take a look at Q4 again.

1 - 10 - 14

LO - To subtract decimals using the compact method.

1. £~~10~~ 9 ~~.~~ 48 — £5.83 = £4.95 ✓
   £4.95 + £5.83 = £10.78
   1

2. £93.85 − £50.30 = £43.55 ✓
   £43.55 + £50.30 = £93.85

3. £4 7 13 ~~8~~ .139 − £374.63 = £109.76 ✓
   £109.76 + £374.63 = £484.39
   1 1

4. £3 10 12 ~~4~~ ~~4~~ .~~8~~17 − £9.49 = £31.88 ✓
   £31.88 + £9.49 = £41.37
   1 1 1

5. £10 2 ~~8~~ .156 − £0.61 = £102.95 ✓
   £102.95 + £0.61 = £103.56
   1

6. £5 6 7 ~~8~~ .147 − £103.56 = £464.91 ✓
   £464.91 + £103.56 = £568.47
   1

7. £13 7 ~~8~~ .129 − £17.55 = £120.74 ✓
   £120.74 + £17.55 = £138.29
   1

8. £2 8 11 ~~9~~ ~~8~~ .104 − £22.22 = £269.82 ✓
   £269.82 + £22.22 = £292.04
   1 1

9. £9 9 9 9 . 9 11
- £ 81.26
£918.75

£918.75 ✓
+£ 81.26
£1000.01

10. £8 8 6 . 8 6
- £ 14.02
£866.18

£866.18 ✓✓
+£ 14.02
£880.20

Sdg assessed using the inverse operation.

✓✓ Daiawn
Great subtraction of decimals.

2-10-14

L.O- To multiply decimals using the compact method

1. 364.27
× .4
1457.08

2. 7951.32
× .2
15902.64 ✓✓
✗ ✗

3. 6391.15
× .8
5112.20 ✓✓
✗ ✗ ✗

4. 6436.34
× .7
45054.38 ✓✓
✗ ✗ ✗ ✗

5. 8493.25
× 6
50959.50 ✓✓
✗ ✗ ✗ ✗

6. 3421.65
× .a
30794.85 ✓✓
31.5 ✗

- Great multiplication of decimals
* Take a look at Q1 again please.

Adding numbers up

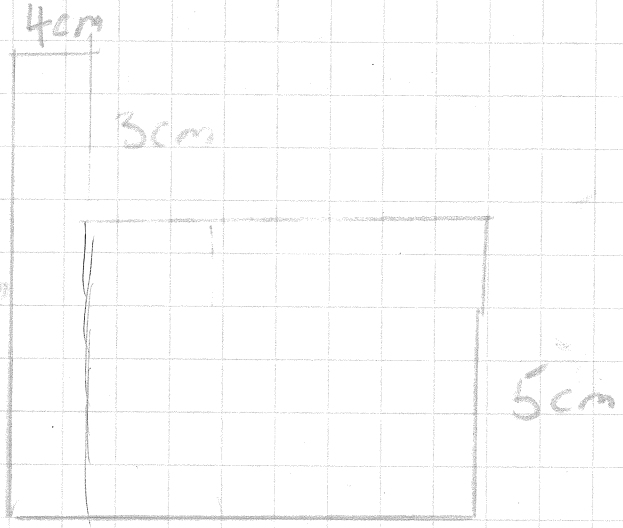
6-10-14

## L6-T6 calculate missing dimensions

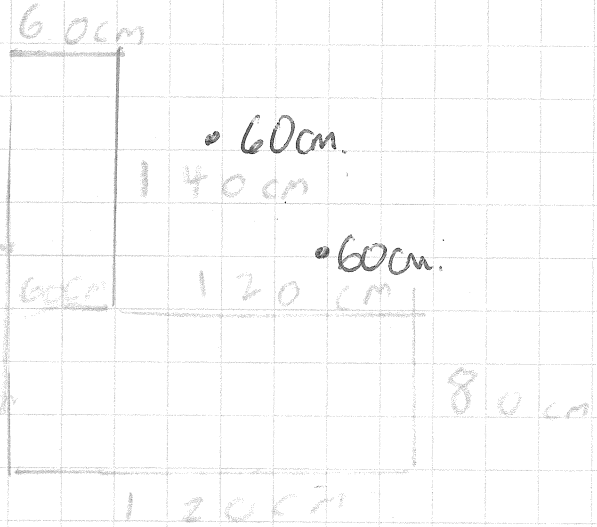
using a calculator

eg

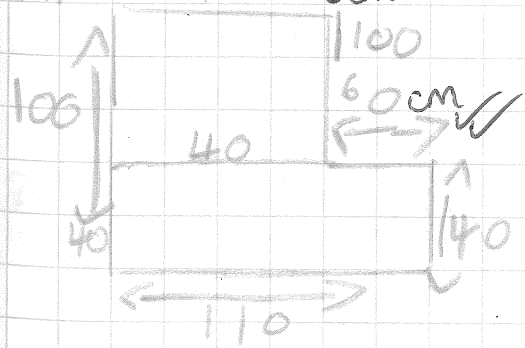
1.)



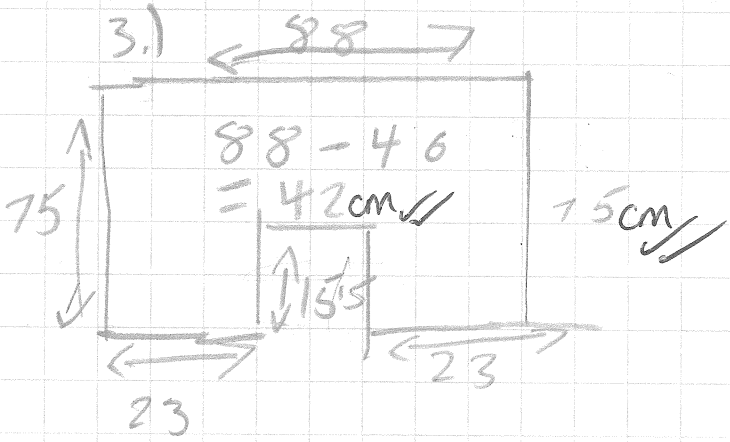

1.)



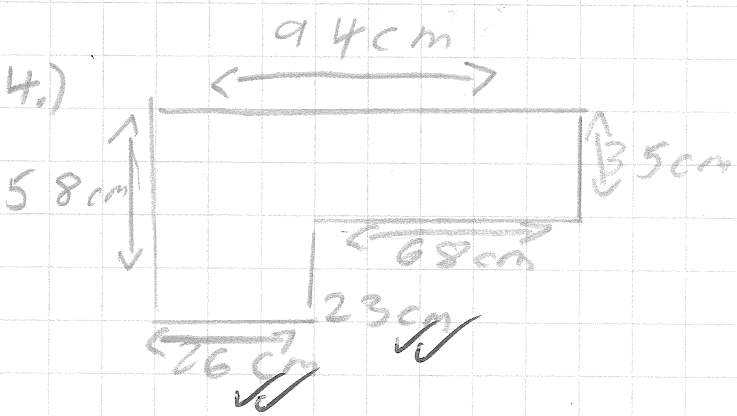

2.)




3.)




4.)



5.




You are working well towards finding the missing dimension.

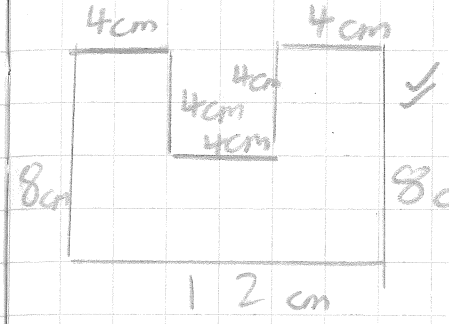
→ We can go back and recap over them again soon

8-10-14

LO- To calculate the perimeter of compound shapes.

Calculate - adding, subtracting, multiplying or dividing numbers.

Perimeter - adding numbers to see how big an area is.

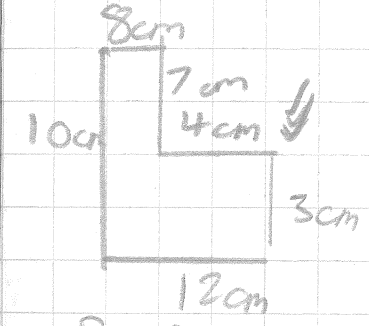



Perimeter = 48 cm ✓

4 + 4 + 4 + 4 + 4 = 20cm

8 + 8 = 16 cm

20
+ 16
+ 12
48 cm

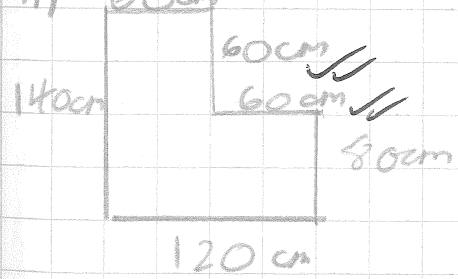



Perimeter = 44cm ✓

8 + 4 + 7 + 3 = 23 cm

22 cm
+ 12 cm
+ 10 cm
44

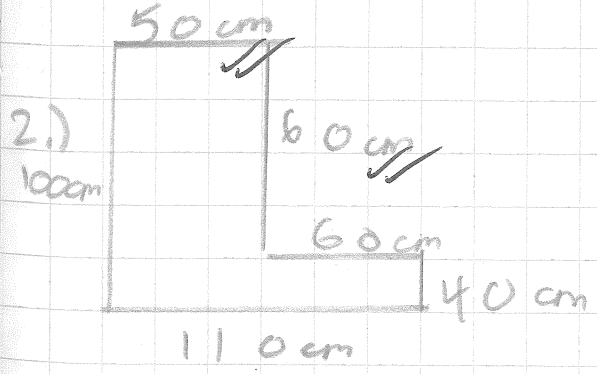
P19

1.) 


520 cm

Perimeter = 80 + 60 + 60 + 60 = 260cm

260 cm
+ 140 cm
+ 120 cm
520 cm ✓✓

2.) 

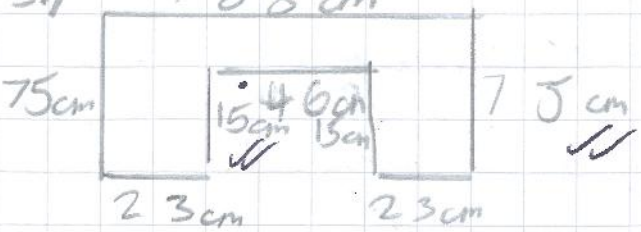

Perimeter = 420 cm

50 + 40 = 90

60 + 60 = 120

120
+ 110
+ 100
+ 90
420 cm ✓✓

3.)

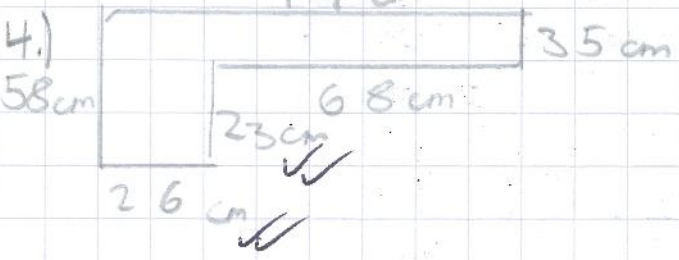



Perimeter = 75 + 15 + 23 + 62 + 108 + 88 + 30

376 cm

150 + 108 + 88 + 30 = 376

4.)




Perimeter = 26 + 23 + 58 + 94 + 68 + 35 + 197

304 cm

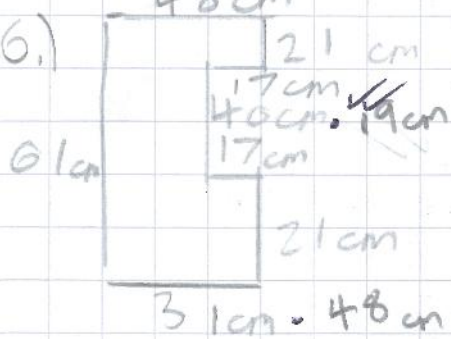
5.)




Perimeter = 24 + 23 + 47 + 12 + 182 + 229

182 + 24 + 9 + 3 = 218 cm

6.)




Perimeter = 21 + 61 + 48 + 17 + 42 + 55 + 55 + 40 + 31 + 277 + 40 + 317

252 cm

1.)
2.)
3.)

Gwaith da,
→ Have a look back your calculation for number 5.

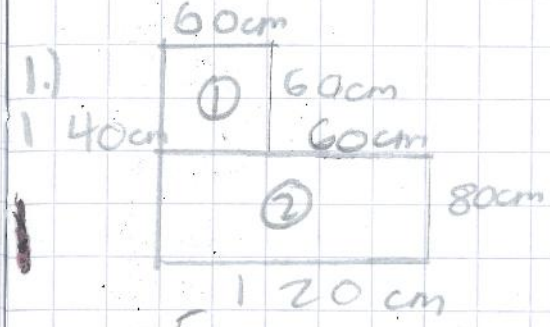
9-10-14

Lo- To calculate the area of compound shapes

Area - calculating the inside of a shape

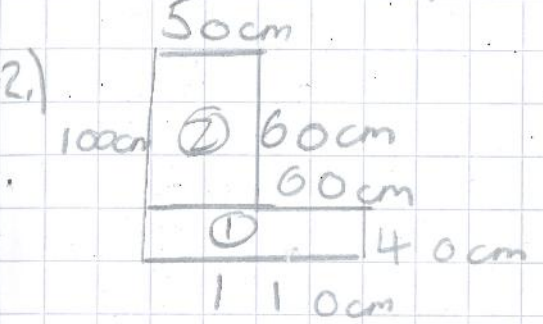
Compound shape -

1.)



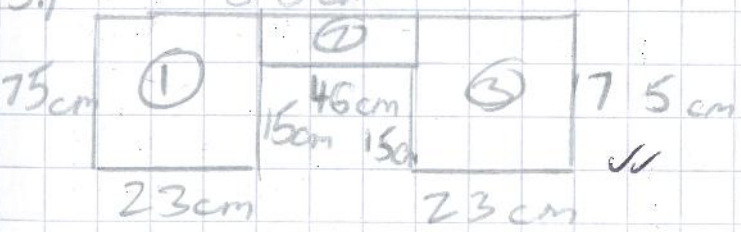

Area: $60 \times 60 = 3600 cm^2$
$120 \times 80 = 9600 cm^2$
$9600 cm^2$
$+ 3600 cm^2$
$13200 cm^2$

2.)




Area = $110 \times 40 = 4400 cm^2$
$60 \times 50 = 3000 cm^2$
$4400 cm^2$
$+ 3000 cm^2$
$7400 cm^2$

3.)

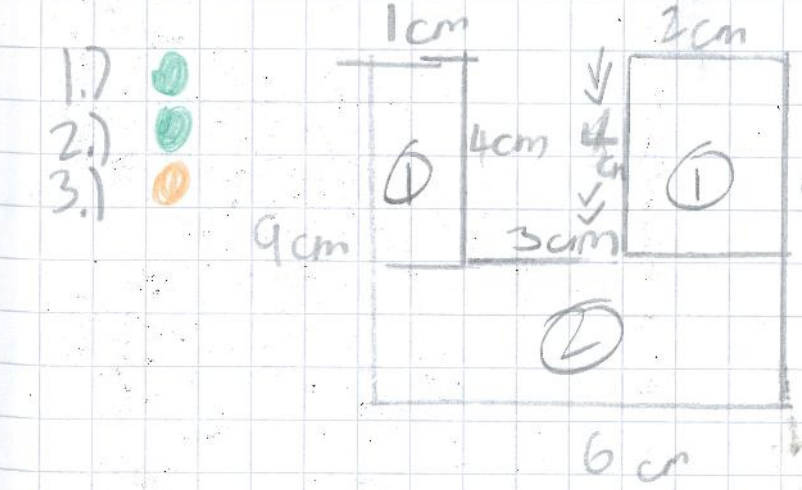



Area = $75 \times 23$
$155 cm^2$

$1725$
$240$
$60 \times 42 \times 23$
$240 \quad 155 cm$

- My these multiplications again.

Area: $4 \times 1 = 4 cm^2$
$6 \times 5 = 30 cm^2$
$2 \times 4 = 8 cm cm^2$
$30 + 4 + 8 = 42 cm^2$

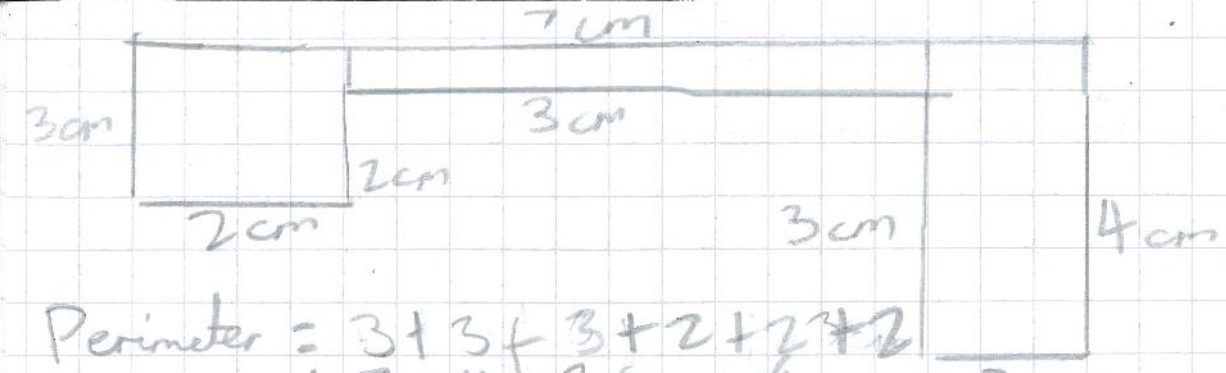



1.) 🟢
2.) 🟢
3.) 🟠

Perimeter =
$9 + 9 + 4 + 1 + 3 + 5 + 2 + 6 = 38 cm$

A super effort.

→ Check your multiplications with a grid method if you do not feel as confident with the compact method.




Perimeter = 3+3+3+2+2+2
+7+4=26 cm

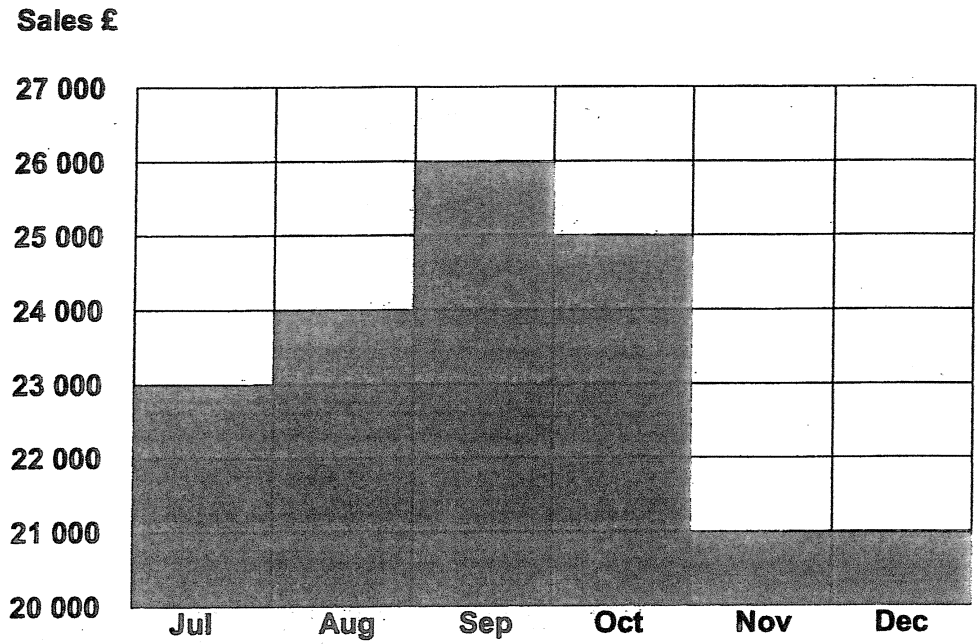
Area = 3×2 = 6 cm²
3×1 = 3 cm²
4×2 = 8 cm²
8*3*6 = 17 cm²

Teegan 14/10/14

L.O. To interpret a range of graphs and charts


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1. This graph shows the sales of clothes in a shop during the last six months of the year.




Say whether these statements are true or false:

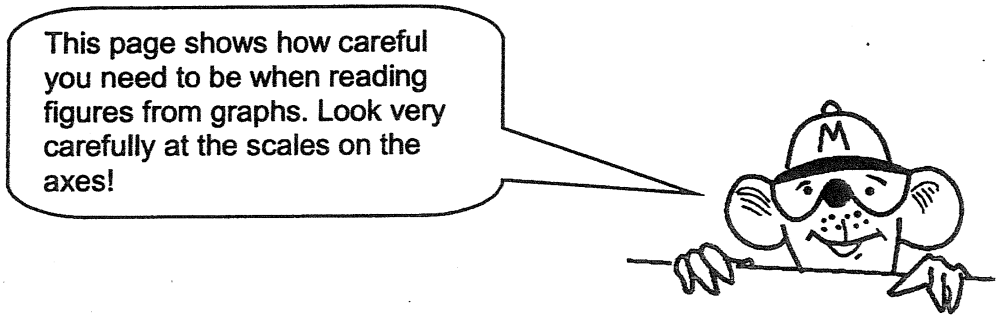
a) The sales in September were twice as much as in July. F //

b) More was sold in October than in November and December together. F //

c) Sales in September were six times as much as in November. F //

False

d) Now draw the graph again, this time starting at £0 on the sales axis. How is your graph different to the one above?



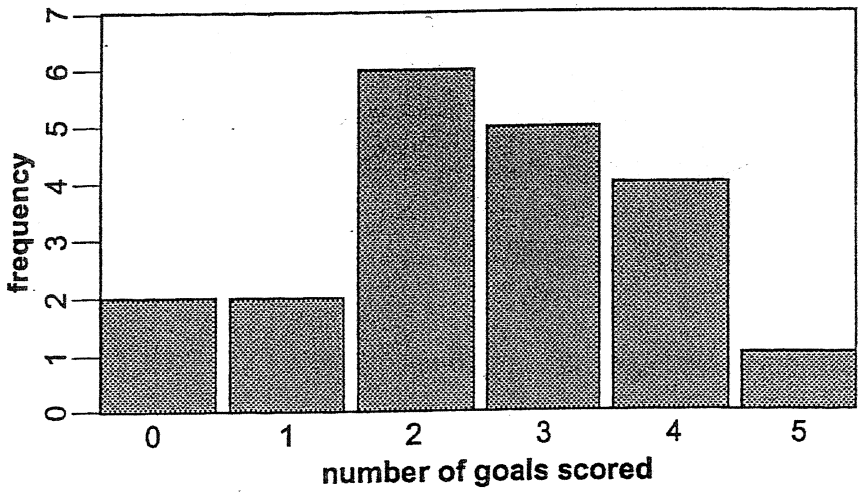

Da iawn

Excellent interpretation of the different types of graphs / charts.

## Goals

### Goals scored by Harriers

This bar chart shows the number of goals scored by Harriers in last season's matches.




1 What was the highest number of goals Harriers scored in a match? 5 //

2 How many matches in total did Harriers play? 20 //

3 In how many matches did Harriers score more than three goals? 5 //

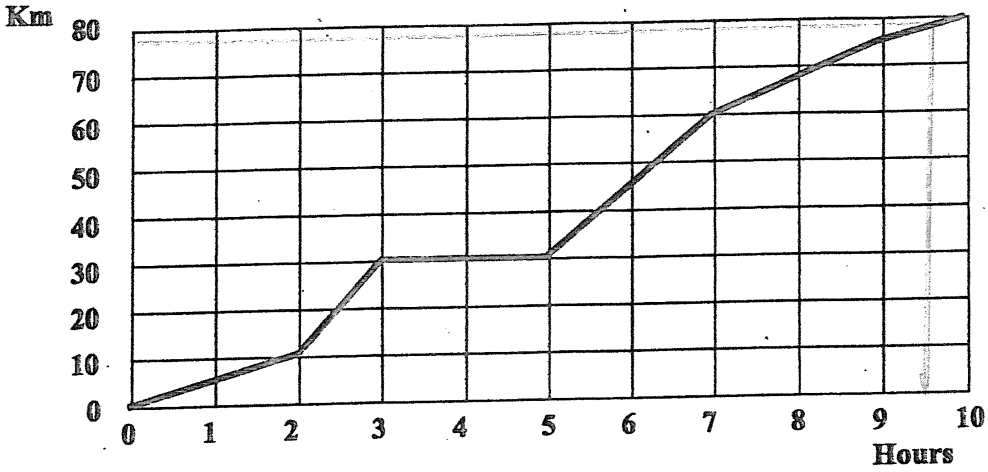
4 What was the most common number of goals scored (mode)? 2 //

5 How likely are Harriers to score seven goals in a match when they play in the same league this season? Very Unlikely //

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## Extension Work

The graph shows the distance a cyclist rode in a time of 10 hours.




Answer these questions:

a) How far was the cyclist from the starting point after **two hours?** 10Km //

b) How far was she from the starting point after **seven hours?** 60km //

c) What was the cyclist doing between the **third** and the **fifth hours?** Having a re //

d) How far did she cycle in the **ten hours?** 80km //

e) What was her average speed over the journey? 8 km per hour //

f) Between which hours was she cycling fastest? 2 - 3 hours //

g) What was her average speed when she was cycling fastest? 20 km per hou //

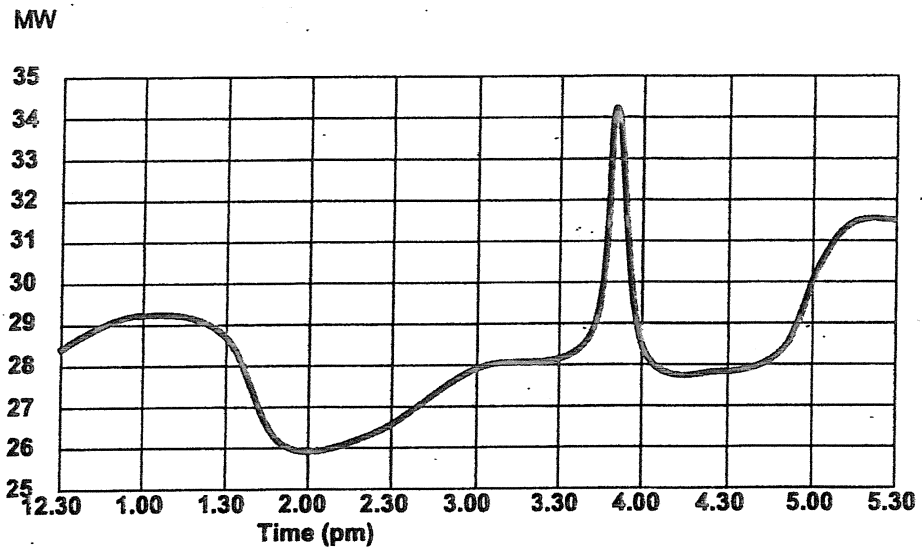
h) Estimate how far she had gone after **9 hours 30 minutes.** 77 km //

i) If she rode back at a steady speed of **16 Km/hr**, how long would it take her to return? 5 hours //

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1. This graph shows the amount of electricity being used in a town in England during part of cup final day. The match started at 3.00pm.

   The amount of electricity being used is measured in **megawatts** (MW).




Answer these questions:

a) How much power was being used at 12.30 pm? 28.5MW //

b) How much power was being used at 2.00 pm? 26 MW //

c) How much power was being used at the peak at about 3.45 pm? 34.2 MW //

d) Why was quite a lot of power being used between about 12.30 and 1.30 pm? Lunch

e) Why did the amount of power used drop at about 2.00 pm? Finished their lunch.

f) If no extra time was played after the first half, what happened in the match at 3.45 pm? Hals time. //

g) Why did the power used suddenly increase dramatically at 3.45 pm? making a sn //

h) Why did the amount of power used rise steadily again from about 4.45 pm? People start to make tea. //

20-10-14

LO - To record results systematically

record -

Systematically - it's a systen

22-10-14

LO- To begin to use algebra to solve equations.

Algebra - numbers that have been put into shapes and letters.

Equations - A sum for example 2+2=4

1.) $5 \times a = 50$ $50 \div 5 = 10$
$a = 10$ ✓✓

2.) $5 \times a = 45$ $45 \div 5 = 9$
$a = 9$ ✓✓

3.) $2 \times a = 14$ $14 \div 2 = 7$
$a = 7$ ✓✓

4.) $3 \times y = 9$ $9 \div 3 = 3$
$y = 3$ ✓✓

5.) $3 \times x = 12$ $12 \div 3 = 4$
$x = 4$ ✓✓

6.) $6 \times a = 12$ $12 \div 6 = 2$
$a = 2$ ✓✓

7.) $5 \times y = 25$ $25 \div 5 = 5$
$y = 5$ ✓✓

8.) $2 \times y = 8$ $8 \div 2 = 4$
$y = 4$ ✓✓

9.) $4 \times a = 8$ $8 \div 4 = 2$
$a = 2$ ✓✓

10.) $4 \times a = 12$ $12 \div 4 = 3$
$a = 3$ ✓✓

11.) $4 \div a = 2$

→ Find a for Number 11.

Gwaith da.
You have shown that you can begin to use algebra to solve equations

3-11-14

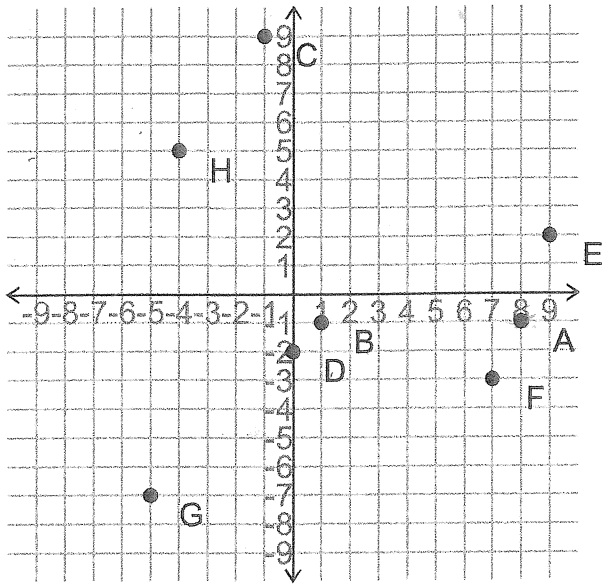
Lo-To read and plot co-ordinates in all four quadrants.

Plot- to plan something ✓✓
co-ordinates- are on a map ✓✓ and they show where something is. ✓✓

✓✓ Excellent reading and plotting of co-ordinates in all four quadrants

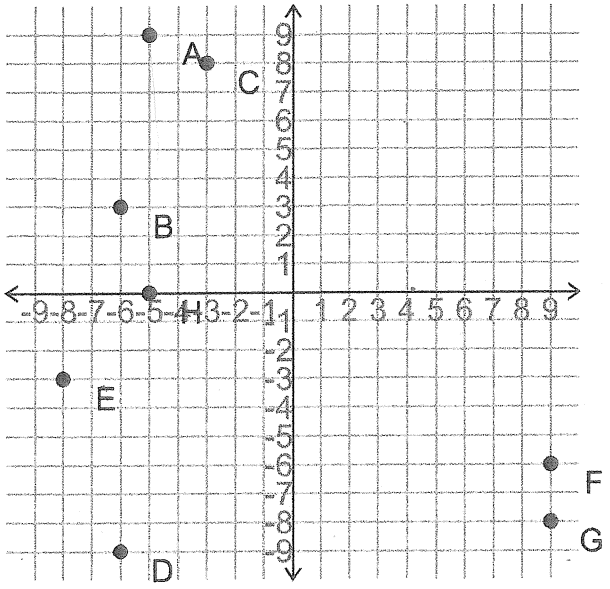
# Co-ordinates

1.



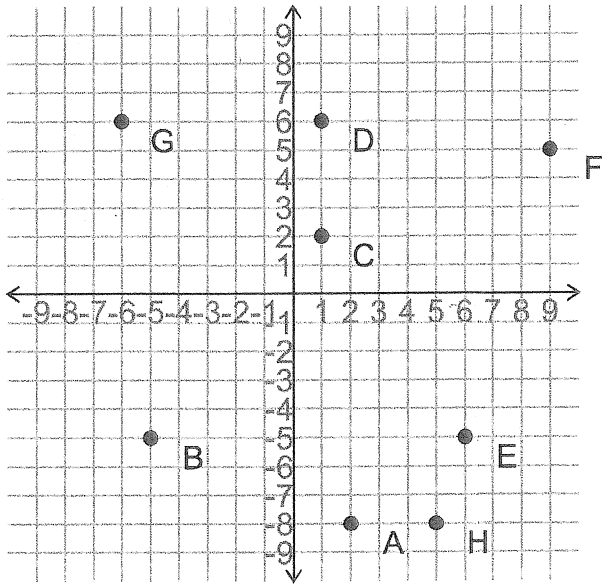

A = (8,-1) ✓✓ B = (1,-1) ✓✓
C = (-1,9) ✓✓ D = (0,-2) ✓✓
E = (9,2) ✓✓ F = (7,-3) ✓✓
G = (-5,-7) ✓✓ H = (-4,5) ✓✓

2.



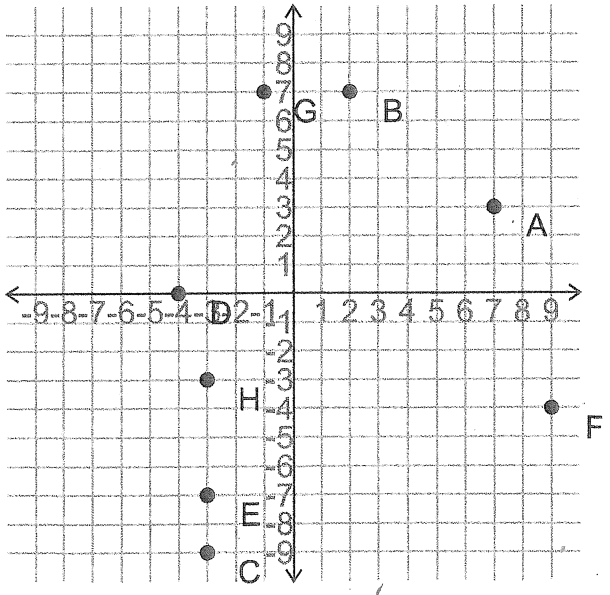

A = (-5,9) ✓✓ B = (-6,3) ✓✓
C = (-3,8) ✓✓ D = (-6,-9) ✓✓
E = (-8,-3) ✓✓ F = (9,-6) ✓✓
G = (9,-8) ✓✓ H = (-5,0) ✓✓

3.




A = (2,-8) ✓✓ B = (-5,-5) ✓✓
C = (1,2) ✓✓ D = (1,6) ✓✓
E = (6,-5) ✓✓ F = (9,5) ✓✓
G = (-6,6) ✓✓ H = (5,-8) ✓✓

4.




A = (7,3) ✓✓ B = (2,7) ✓✓
C = (-3,-9) ✓✓ D = (-4,0) ✓✓
E = (-3,-7) ✓✓ F = (9,-4) ✓✓
G = (-1,7) ✓✓ H = (-3,-3) ✓✓

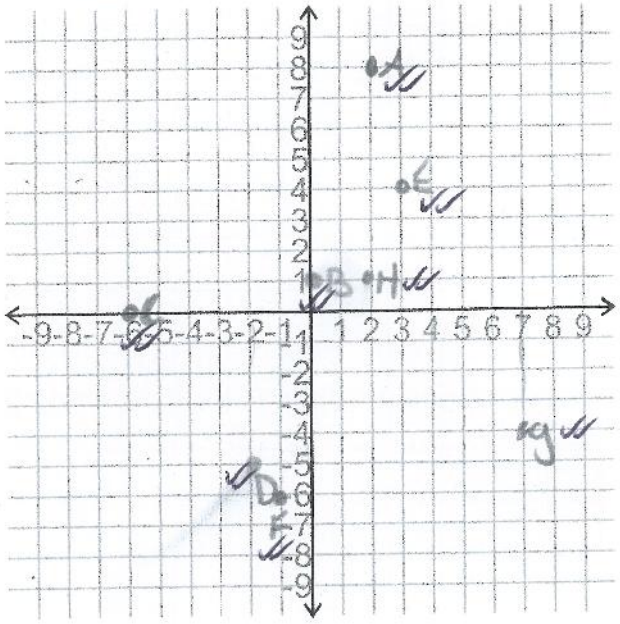


E

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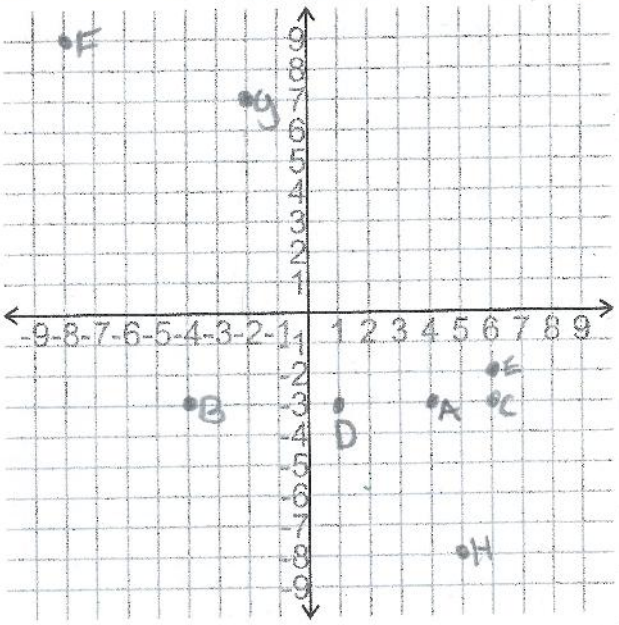
# Co-ordinates

1.



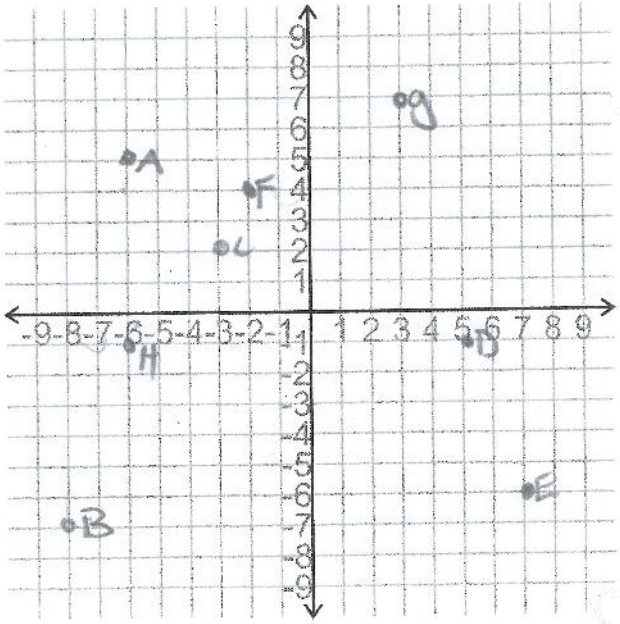
A =(2, 8) B =(0, 1)
C =(-6, 0) D =(-2, -5)
E =(3, 4) F =(-1, -6)
G =(7, -4) H =(2, 1)

2.



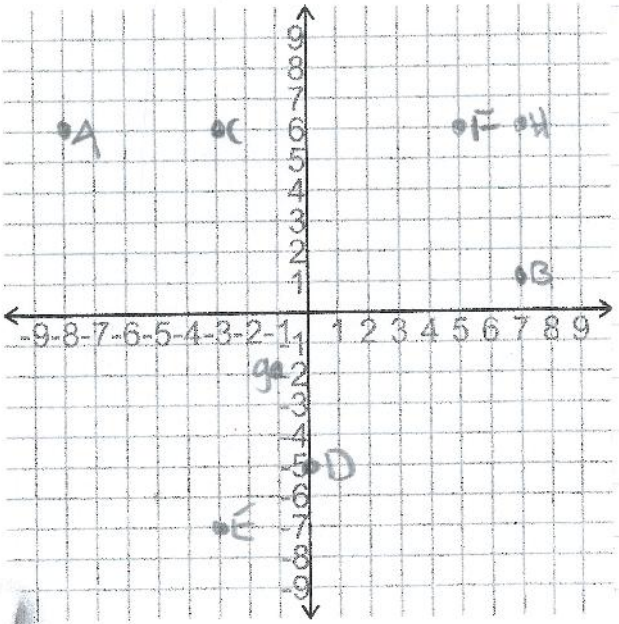
A =(4, -3) B =(-4, -3)
C =(6, -3) D =(1, -3)
E =(6, -2) F =(-8, 9)
G =(-2, 7) H =(5, -8)

3.



A =(-6, 5) B =(-8, -7)
C =(-3, 2) D =(5, -1)
E =(7, -6) F =(-2, 4)
G =(3, 7) H =(-6, -1)

4.



A =(-8, 6) B =(7, 1)
C =(-3, 6) D =(0, -5)
E =(-3, -7) F =(5, 6)
G =(-1, -2) H =(7, 6)



G

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4-11-2014

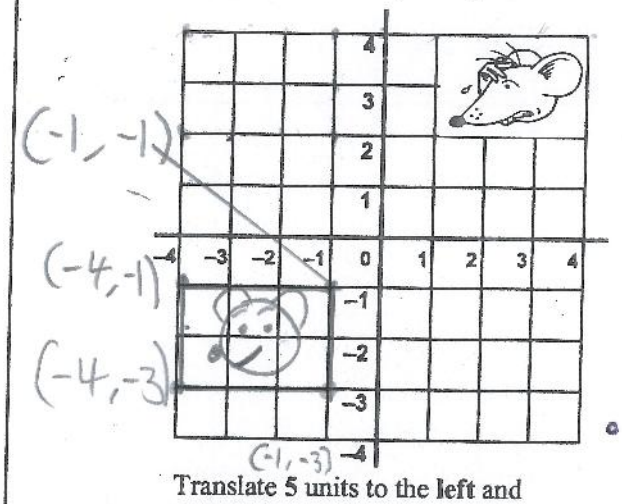
LO- To translate 2D shapes in all four quadrants.

Translate - you can translate languages into your language.

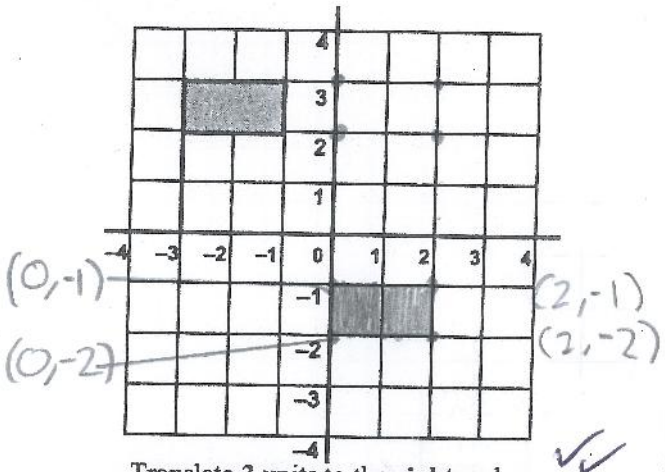
2D shapes - shapes that are flat for example square, triangle.

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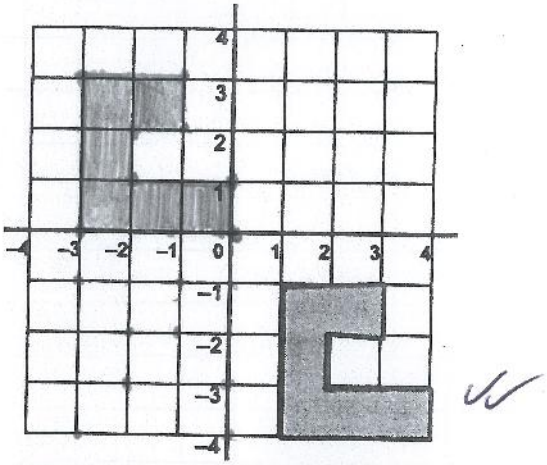
1. Translate the shapes by the amount shown:



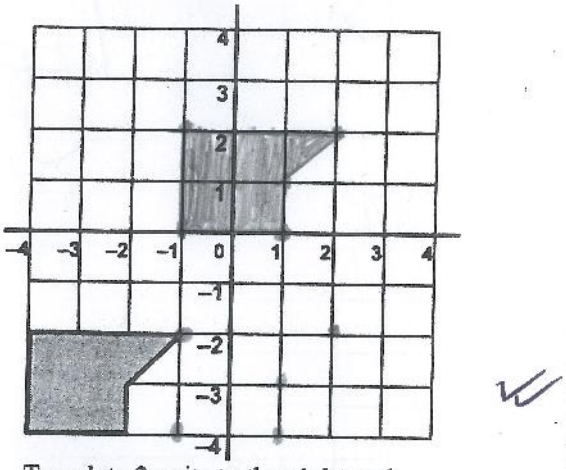

Translate 5 units to the **left** and 4 units **down**



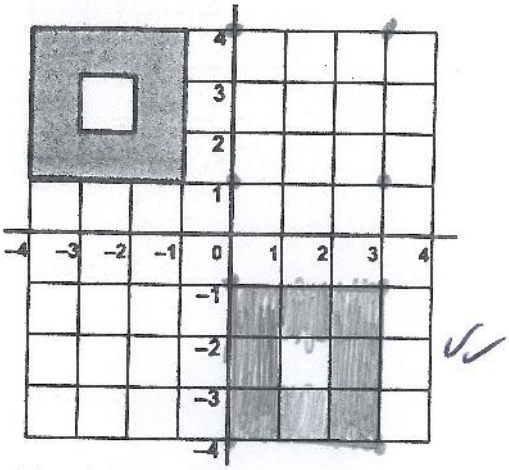

Translate 3 units to the **right** and 4 units **down**



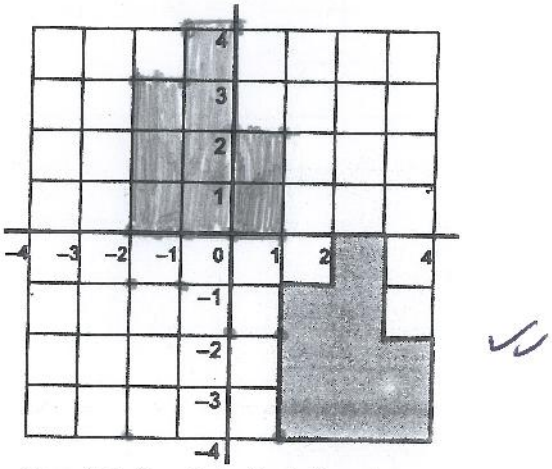
Translate 4 units to the **left** and 4 units **up**



Translate 3 units to the **right** and 4 units **up**



Translate 4 units to the **right** and 5 units **down**



Translate 3 units to the **left** and 4 units **up**

A very good understanding of translating 2D shapes using all four quadrants.

5 - 11 - 14

Lo - To reflect 2D shapes in all four quadrants.

Reflect - □|□ ✓ It's like reflection.

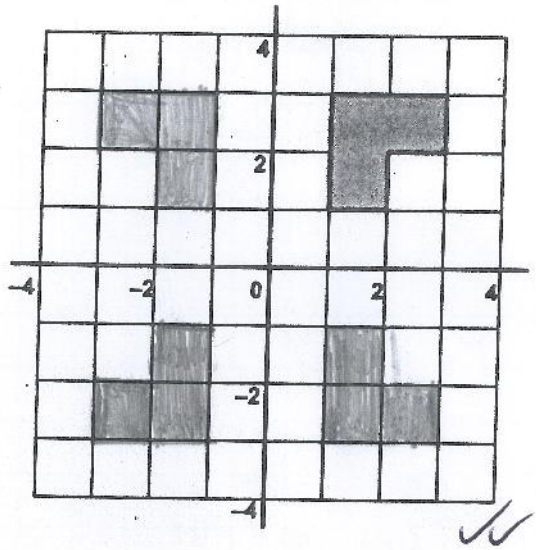
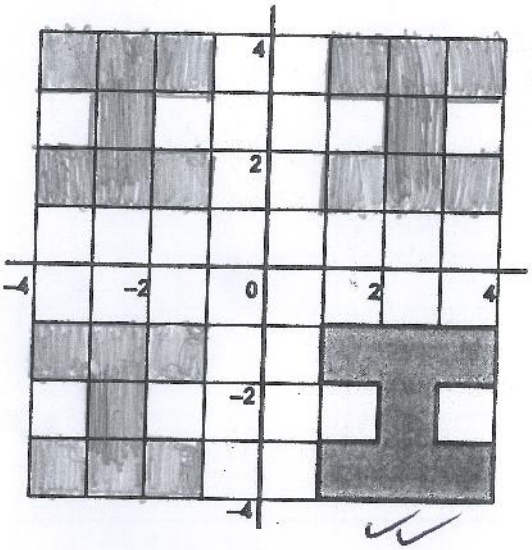
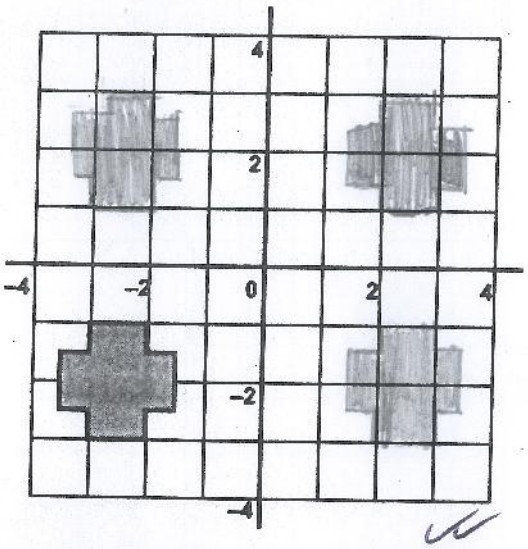
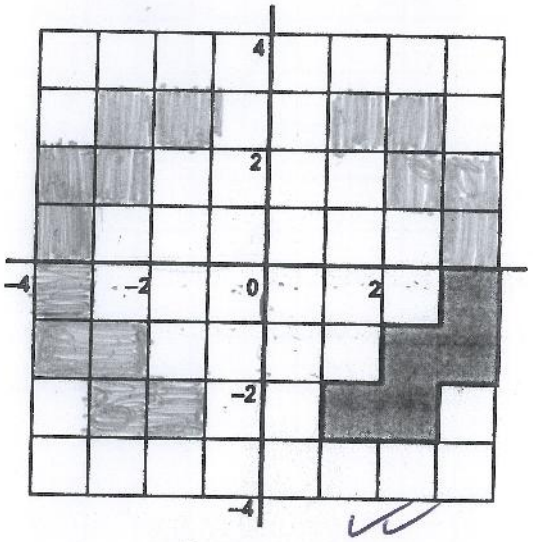
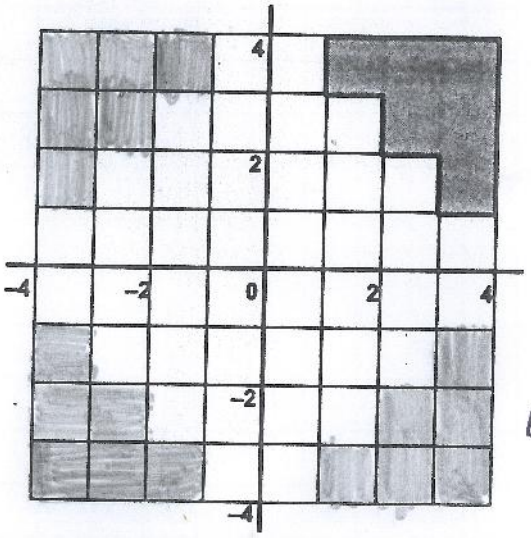
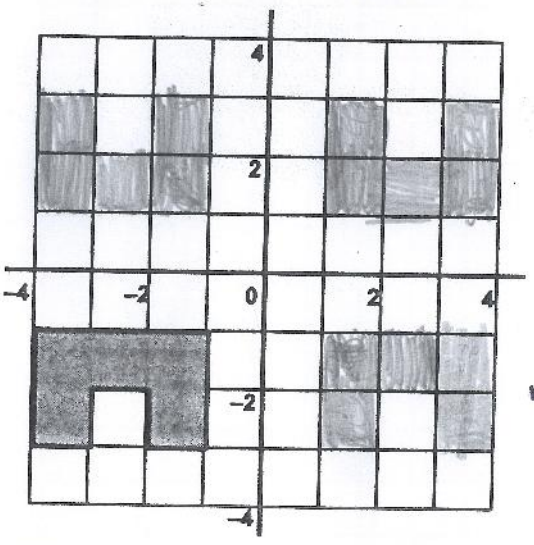
Quadrant - There are four quadrants. There are quadrants on co-ordinates. The first quadrant is positive. The third quadrant is negative.

| 2nd | 1st |
|---|---|
| 3rd | 4th |

✓ Well remembered!

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1. Reflect the following shapes in both mirror lines.

Well done An excellent understanding of reflecting 2D shapes using all four quadrants.

6-11-14

LO- To rotate 2D shapes in all four quadrant.

1st quadrant: All positive

4th quadrant - The x axis is positive
the y axis is negative

rotation -



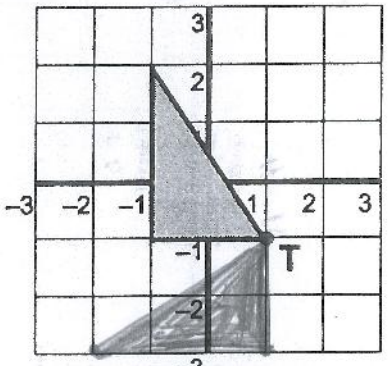
1st

4th

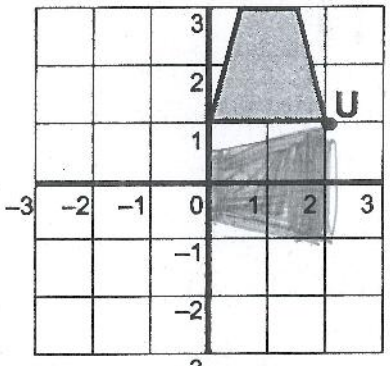
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I would like you to rotate each of the shapes below by the amount shown. Be careful with $90^0$ rotations to watch whether you should rotate clockwise of anti-clockwise!

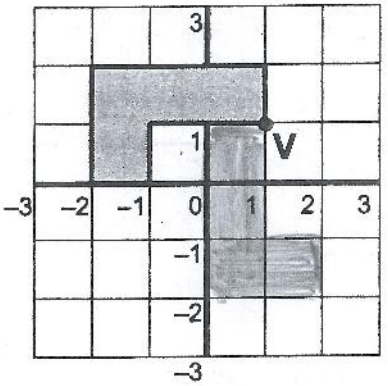


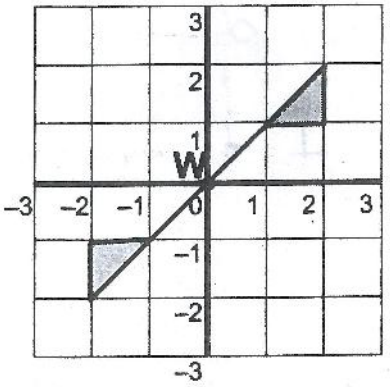

Rotate the triangle about T by **$90^0$** anti-clockwise




Rotate the trapezium about U by **$90^0$** anti-clockwise




Rotate the hexagon about V by **$90^0$** anti-clockwise

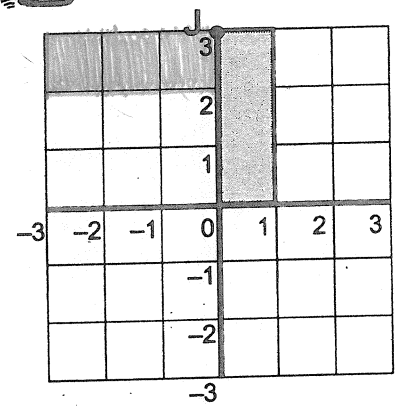



Rotate the double flag about W by **$90^0$** clockwise

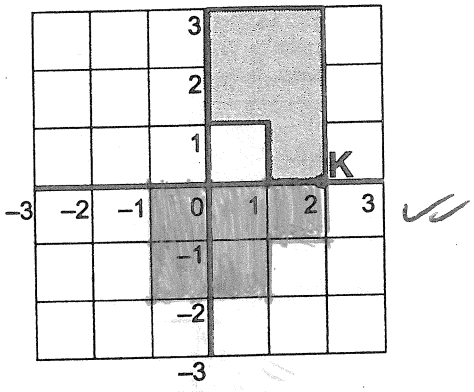
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I would like you to rotate each of the shapes below by the amount shown. Be careful with $90^0$ rotations to watch whether you should rotate clockwise of anti-clockwise!

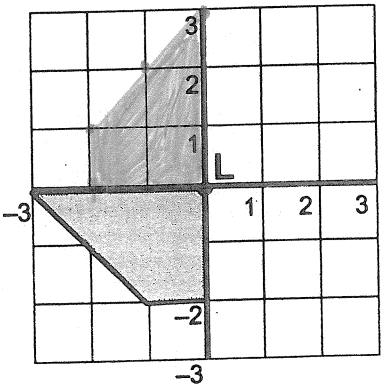


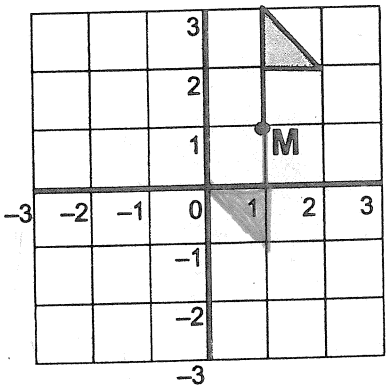

Rotate the rectangle about J by $90^0$ clockwise




Rotate the hexagon about K by $90^0$ anti-clockwise




Rotate the trapezium about L by $90^0$ clockwise




Rotate the flag about M by $180^0$

For not feeling confident at the start of the lesson, you have demonstrated your understanding really well. Addercho's!

10-11-14

LO- To recognise different fractions that are equivalent to each other.

fraction - $\frac{1}{2}$

equivalent - the same for example $\frac{3}{9} - \frac{1}{3}$

1.) $\frac{1}{2} - \frac{2}{4}\ \frac{10}{20} = \frac{100}{200} = \frac{3}{6} = \frac{12}{24} =$

2.) $\frac{1}{4} - \frac{2}{8}\ \frac{10}{40} = \frac{8}{32} = \frac{5}{20} = \frac{20}{80} =$

3.) $\frac{3}{5} - \frac{6}{10}\ \frac{12}{20} = \frac{60}{100} = \frac{21}{35} =$

4.) $\frac{1}{6} - \frac{8}{46}\ \frac{9}{54} = \frac{10}{60} = \frac{7}{42} =$

5.) $\frac{5}{8} - \frac{35}{54}\ \frac{20}{32} = \frac{15}{24} =$

Have a look back at these.

$\frac{1}{6} \xrightarrow{\times 8} \frac{8}{46}$ $\quad \frac{5}{8} \xrightarrow{\times 7} \frac{35}{56}$

6.) $\frac{4}{7} - \frac{12}{21}\ \frac{28}{49}\ \frac{5}{8}\ \frac{40}{70}$

7.) $\frac{11}{12} - \frac{110}{120}\ \frac{22}{24}\ \frac{44}{48}\ \frac{88}{96}$

8.) $\frac{9}{10} - \frac{90}{100}\ \frac{18}{20}\ \frac{81}{90}\ \frac{36}{40}$

9.) $\frac{25}{100} - \frac{250}{1000}$

$\frac{50}{200}\ \frac{75}{400}$

10.) $\frac{8}{11} - \frac{16}{22}\ \frac{36}{44}$

$\frac{72}{88}$

11.) $\frac{3}{9} - \frac{6}{18}\ \frac{1}{3}\ \frac{12}{36}\ \frac{24}{72}$

12.) $\frac{3}{2} - \frac{6}{4}\ \frac{12}{8}\ \frac{24}{16}$

$\frac{48}{32}$

11-11-14

Lo - To simplify fractions.

1.) $\frac{27}{36} = \frac{3}{4}$ //

2.) $\frac{15}{20} = \frac{3}{4}$ //

3.) $\frac{4}{14} = \frac{2}{7}$ //

4.) $\frac{8}{20} = \frac{4}{10} = \frac{2}{5}$ //

5.) $\frac{6}{9} = \frac{2}{3}$ //

6.) $\frac{12}{42} = \frac{6}{21} = \frac{2}{7}$ //

7.) $\frac{27}{45} = \frac{9}{15} = \frac{3}{5}$ //

8.) $\frac{70}{100} = \frac{45}{50} = \frac{9}{10}$ ? check again.

9.) $\frac{16}{36} = \frac{8}{18} = \frac{4}{9}$ //

10.) $\frac{16}{24} = \frac{8}{12} = \frac{4}{6} = \frac{2}{3}$ //

11.) $\frac{12}{24} = \frac{6}{12} = \frac{3}{6} = \frac{1}{2}$ //

12.) $\frac{18}{24} = \frac{9}{12} = \frac{3}{4}$ //

13.) $\frac{12}{24} = \frac{6}{12} = \frac{3}{6} = \frac{1}{2}$ //

14.) $\frac{3}{24} = \frac{1}{8}$ //

15.) $\frac{9}{24} = \frac{3}{8}$ //

16.) $\frac{2}{24} = \frac{1}{12}$ //

17.) $\frac{6}{24} = \frac{1}{4}$ //

Well done

Excellent simplifying of fractions.

13-11-14

LO.- To order fractions using a common denominator.

1.) $\frac{2}{3}$ $\frac{3}{5}$ $\frac{3}{4}$

$\frac{20}{60}$ $\frac{12}{60}$ $\frac{15}{60}$ ✓

$\frac{3}{5} < \frac{3}{4} < \frac{2}{3}$

2.) $\frac{2}{7}$ $\frac{1}{3}$ $\frac{8}{21}$

$\frac{6}{21}$ $\frac{7}{21}$ $\frac{8}{21}$

$\frac{2}{7} < \frac{1}{3} < \frac{8}{21}$ ✓

3.) $\frac{5}{9}$ $\frac{2}{3}$ $\frac{11}{18}$

$\frac{10}{18}$ $\frac{9}{18}$ $\frac{11}{18}$ X

$\frac{2}{3} < \frac{5}{9} < \frac{11}{18}$

4.) $\frac{1}{4}$ $\frac{5}{12}$ $\frac{2}{3}$

$\frac{3}{12}$ $\frac{5}{12}$ $\frac{8}{12}$

$\frac{1}{4} < \frac{5}{12} < \frac{2}{3}$ ✓

5.) $\frac{3}{5}$ $\frac{1}{2}$ $\frac{4}{7}$ X

$\frac{14}{70}$ $\frac{35}{70}$ $\frac{10}{70}$

$\frac{4}{7} < \frac{3}{5} < \frac{1}{2}$

6.) $\frac{3}{4}$ $\frac{4}{5}$ $\frac{7}{10}$

$\frac{50}{200}$ $\frac{40}{200}$ $\frac{20}{200}$

$\frac{7}{10} < \frac{4}{5} < \frac{3}{4}$ X

7.) $\frac{1}{2}$ $\frac{7}{12}$ $\frac{5}{6}$

$\frac{6}{12}$ $\frac{7}{12}$ $\frac{10}{12}$

$\frac{1}{2} < \frac{7}{12} < \frac{5}{6}$ ✓

8.) $\frac{3}{7}$ $\frac{2}{3}$ $\frac{4}{9}$

$\frac{27}{189}$ $\frac{72}{189}$ $\frac{21}{189}$

$\frac{4}{9} < \frac{3}{7} < \frac{2}{3}$ X

9.) $\frac{1}{2}$ $\frac{1}{3}$ $\frac{5}{11}$

$\frac{33}{66}$ $\frac{22}{66}$ $\frac{6}{66}$

$\frac{5}{11} < \frac{1}{3} < \frac{1}{2}$ X

10.) $\frac{9}{10}$ $\frac{3}{4}$ $\frac{11}{12}$

$\frac{48}{480}$ $\frac{120}{480}$ $\frac{40}{480}$

$\frac{11}{12} < \frac{9}{10} < \frac{3}{4}$ X

11.) $\frac{2}{3}$ $\frac{4}{5}$ $\frac{5}{8}$

$\frac{40}{120}$ $\frac{24}{120}$ $\frac{15}{120}$

$\frac{5}{8} < \frac{4}{5} < \frac{2}{3}$ X

Self assessed.

Correction

$\frac{2}{3}$ $\frac{4}{5}$ $\frac{5}{8}$

$\frac{80}{120}$ $\frac{96}{120}$ $\frac{75}{120}$

$\frac{5}{8} < \frac{2}{3} < \frac{4}{5}$

Well done

You've had a good go at using a common denominator to order the fractions.

⇒ Corrections please.

17-11-14

Lo-To find fractions of quantities

1.) $\frac{1}{10}$ of £125 = £12.50

$\frac{4}{10}$ of £125 = £50 //

2.) $\frac{1}{10}$ of £58 = £5.80

$\frac{4}{10}$ of £58 = £23.20 //

3.) $\frac{1}{10}$ of £12.50 = £1.25

$\frac{4}{10}$ of £12.50 = £5.00 //

£1.25 × 4 = £5.00

4.) $\frac{1}{10}$ of £150 = £15.00

$\frac{4}{10}$ of £150 = £60.00 //

5.) $\frac{1}{10}$ of £425 = £42.50

$\frac{4}{10}$ of £425 = £170.00 //

£42.50 × 4 = £170.00

6.) $\frac{1}{10}$ of £260 = £26.00

$\frac{4}{10}$ of £260 = £104.00 //

£26.00 × 4 = £104.00

7.) $\frac{1}{10}$ of £320 = £32.00

$\frac{4}{10}$ of £320 = £128.00 //

8.) $\frac{1}{10}$ of £740 = £74.00

$\frac{4}{10}$ of £740 = £296.00 //

9.) $\frac{1}{10}$ of £1000 = £100

$\frac{4}{10}$ of £1000 = £400 //

10.) $\frac{1}{5}$ of 40 = 8

$\frac{4}{5}$ of 40 = 32 //

11.) $\frac{1}{8}$ of 48 = 6

$\frac{7}{8}$ of 48 = 42 //

12.) $\frac{1}{9}$ of 81 = 9

$\frac{2}{9}$ of 81 = 18 //

13.) $\frac{1}{7}$ of 77 = 11

$\frac{2}{7}$ of 77 = 22 //

14.) $\frac{1}{4}$ of 28 = 7

$\frac{3}{4}$ of 28 = 21 //

15.) $\frac{1}{3}$ of 90 = 30

$\frac{2}{3}$ of 90 = 60 //

16.) $\frac{1}{6}$ of 120 = 20

$\frac{5}{6}$ of 120 = 100 //

17.) $\frac{1}{8}$ of 240 = 30

$\frac{3}{8}$ of 240 = 90 //

18.) $\frac{1}{10}$ of 500 = 50

$\frac{7}{10}$ of 500 = 350 //

Gwaith da
Excellent calculation
of the percentages of quantities.

18-11-14

Lo - To calculate percentages.

1.) 10% of 140 = 14 //
20% of 140 = 28

2.) 10% of 280 = 28 //
30% of 280 = 84

3.) 10% of 190 = 19 //
40% of 190 = 76

4.) 10% of 250 = 25 //
50% of 250 = 125

5.) 10% of 360 = 36 //

6.) 10% of 180 = 18 //
30% of 180 = 54

7.) 10% of 340 = 34 //
20% of 340 = 68

8.) 10% of 170 = 17 //
40% of 170 = 68

9.) 10% of 220 = 22
60% of 220 = 132 //

10.) 10% of 200 = 20
80% of 200 = 160 ?

11.) 10% of 120 = 1
30% of 120 = 3

12.) 10% of 40 = 4 //
40% of 40 = 16

13.) 10% of 350 = 35 //
20% of 350 = 70

14.) 10% of 36 = 3.6 //
50% of 36 = 18

15.) 10% of 400 = 40 ✓

16.) 10% of 300 = 30 ✓
30% of 300 = 90

Ardderchog

Excellent calculation of percentages.

20-11-14

LO - To calculate sale prices using percentages.

1) 10% of 160 = 16

50% of 160 = 80 children //

2) 10% of 300 = 30

40% of 300 = 120 children //

3) 10% of 180 = 18

20% of 180 = 36 children //

4) 10% of 440 = 44

40% of 440 = 176 children //

5) 10% of 140 = 14 children //

6) 10% of 240 = 24

20% of 240 = 48 children //

7) 10% of 400 = 40

5% of 400 = 20

20% of 400 = 80

25% of 400 = 100 children //

8) 10% of 200 = 20

5% of 200 = 10

70% of 200 = 140

75% of 200 = 150 children //

$$\begin{array}{r} 44 \\ \times \quad 4 \\ \hline 16 \\ 160 \\ \hline 176 \end{array}$$

9.) 10% of £30 = £3　　£30 - £9 = £21 //

30% of £30 = £9

10.) 10% of £60 = £6　　£60 - £12 = £48 //

20% of £60 = £12

11.) 10% of £20 = £2　　£20 - £8 = £12 //

40% of £20 = £8

12.) 10% of £40 = £4　　£40 - £10 = £30 //

5% of £40 = £2

20% of £40 = £8

£8 + £2 = £10

25% of £40 = £10

13.) 10% of £80 = £8　　£80 - £60 = £20 //

5% of £80 = £4

70% of £80 = £56

75% of £80 = £60

14.) 10% of £50 = £5　　£50 - £30 = £20 //

60% of £50 = £30

15.) 10% of £70 = £7　　£70 - £17.05
£52 x

5% of £70 = £3.05

20% of £70 = £14

25% of £70 = £17.05

16. 10% of £30 = £3

5% of £30 = £1.50

70% of £30 = £21

75% of £30 = £22.50

£30 - £22.50 = £7.50 =

Well done . Super percentages work.

⇒ Correction please.

27% of 3840 km

10% of 3840km = 384 km

20% = 384 × 2 = 768 km

1% of 3840 = 38.4 km

7% = 38.4
× 7
268.8

768.0
+ 268.8
1036.8 km
11

13% of 324

10% of 324 = 32.4

1% of 32.4 = 3.24

3% = 3.24

$$\begin{array}{r} 3 \\ \hline 9.72 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 32.40 \\ +\ 9.72 \\ \hline 42.12 \\ \hline 1\ 1 \end{array}$$

13% = 32.4 + 9.72 =

24 - 11 - 14

LO - To recognise and use mixed numbers and improper fractions.

1.) $2\frac{3}{8} = \frac{19}{8}$ 19 slices //

2.) $2\frac{5}{6} = \frac{17}{6}$ 17 slices //

3.) $1\frac{7}{8} = \frac{15}{8}$ 15 slices //

4.) $3\frac{1}{4} = \frac{13}{4}$ 13 slices //

5.) $2\frac{2}{3} = \frac{8}{3}$ 8 slices //

6.) $1\frac{1}{6} = \frac{7}{6}$ 7 slices //

7.) $2\frac{2}{7} = \frac{16}{7}$ 16 slices //

8.) $1\frac{7}{9} = \frac{16}{9}$ 16 slices //

9.) $2\frac{11}{12} = \frac{35}{12}$ 35 slices //

10.) $1\frac{7}{10} = \frac{17}{10}$ 17 slices //

11.) $3\frac{4}{5} = \frac{19}{5}$ //

12.) $1\frac{2}{5} = \frac{7}{5}$ //

13.) $2\frac{3}{5} = \frac{13}{5}$ //

14.) $3\frac{1}{5} = \frac{16}{5}$ //

15.) $2\frac{4}{5} = \frac{14}{5}$ //

16.) $3\frac{3}{5} = \frac{18}{5}$ //

17.) $6\frac{1}{5} = \frac{31}{5}$ //

18.) $1\frac{4}{5} = \frac{9}{5}$ //

19.) $2\frac{2}{5} = \frac{12}{5}$ //

20.) $4\frac{2}{5} = \frac{22}{5}$ //

Excellent conversion of the mixed numbers into improper fractions.

25-11-14

LO - To calculate the midpoint between two fractions.

1.) $2\frac{3}{7}$ $2\frac{4}{7}$

midpoint $= 2\frac{3.5}{7} = 2\frac{7}{14} = 2\frac{1}{2}$ ✓✓

2.) $3\frac{3}{5}$ $3\frac{4}{5}$

midpoint $= 3\frac{3.5}{5} = 3\frac{7}{10}$ ✓✓

3.) $1\frac{1}{3}$ $1\frac{2}{3}$

midpoint $= 1\frac{1.5}{3} = 1\frac{3}{6} = 1\frac{1}{2}$ ✓✓

4.) $2\frac{4}{7}$ $2\frac{5}{7}$

midpoint $= 2\frac{4.5}{7} = 2\frac{9}{14}$ ✓✓

5.) $1\frac{3}{8}$ $1\frac{5}{8}$

midpoint $= 1\frac{4}{8} = 1\frac{1}{2}$ ✓✓

6.) $4\frac{7}{9}$ $4\frac{8}{9}$

midpoint $= 4\frac{7.5}{9} = 4\frac{35}{18} = 4\frac{5}{6}$ ✓

7. $3\frac{6}{11}$ $3\frac{7}{11}$

midpoint $= 3\frac{6.5}{11} = 3\frac{13}{22}$ ✓✓

8. $5\frac{13}{15}$ $5\frac{14}{15}$

midpoint $= 5\frac{13.5}{15} = 5\frac{27}{30} = 5\frac{9}{10}$ ✓✓

9. $6\frac{4}{5}$ $7\frac{1}{5}$

Sds assessed

$\frac{34}{5}$ $\frac{35}{5}$ $\frac{36}{5}$

÷5

7 ✓✓

Addendum

Super Calculation of the midpoint between two fractions.

27-11-14

LO - To calculate the mean

1.) Blue total = 25
Mean = 25 ÷ 5 = 5 //

2.) White team = 20
Mean = 20 ÷ 5 = 4 //

3.) Red team = 35
Mean = 35 ÷ 5 = 7 //

4.) Green team = 30
Mean = 30 ÷ 5 = 6 //

5.) Yellow team = 25
Mean = 25 ÷ 5 = 5 //

6.) Orange team = 25
Mean = 25 ÷ 5 = 5 //

7.) Nancy's total = 15
Mean = 15 ÷ 3 = 5 //

8.) Gary's total = 15
Mean = 15 ÷ 3 = 5 //

9.) Kevin's total = 18
Mean = 18 ÷ 3 = 6 //

10.) Corinna's total = 18
Mean = 18 ÷ 3 = 6 //

11.) Parvati's total = 18
Mean = 18 ÷ 3 = 6 //

12.) Tom's total = 12
Mean = 12 ÷ 3 = 4 //

13.) Lucky dip total = 40
Mean = 40 ÷ 4 = 10p //

14.) Tombola total = 30
Mean = 30 ÷ 6 = 5p //

15.) Hoopla total = 60
Mean = 60 ÷ 3 = 20p //

16.) Coconut shy total = 115
Mean = 145 ÷ 5 = 23p //

// Super calculation of mean Daciaw

13. 5-1-15

LO - To multiply decimals using a written method

1. £1.86 × 4 Estimate: £8.00
£7.44 //
3 2

2. £2.99 × 6 Estimate = £18.00
£17.94 //
5 5

3. £8.35 × 2 Estimate = £20.00
£16.70 //
1

4. £9.47 × 5 Estimate = £50.00
£47.35 x
2 3

5. £2.75 × 4 Estimate = £16.00
£11.00 //
3 2

6. £7.59 × 3 Estimate = £24.00
£22.77 //
1 2

7. £3.54 × 7 Estimate = £35.00
£24.78 ✓
3 2

8. £4.44 × 6 Estimate = £30
£26.64 ✓
2 2

9. £6.58 × 7 Estimate = £49
£46.06 //
4 5

10. £1.96 × 5 Estimate = £10.
£9.80 //
4 3

Good decimal multiplication using a standard written method.
⇒ Corrections please

6-1-15

LO- Divide decimals using the chunking method

1.) 49.2 ÷ 4 = 12.3

4 | 49.2
- 40.0 (x10)
9.2
- 8.0 (x2)
1.2
- 1.2 (x0.3)
000

1 . 2 x 10 = 12
12 ÷ 4 = 3
0.3

2.) 73.8 ÷ 3 = 24.6

3 | 73.8
- 60.0 (x20)
13.8
- 12.0 (x4)
1.8
- 1.8 (x0.6)
0

1.8 x 10 = 18
18 ÷ 3 = 6
0.6

3.) 62.8 ÷ 4 = 15.7

4 | 62.8
- 40.0 (x10)
22.8
- 20.0 (x5)
2.8
- 2.8 (x0.7)
0

2.8 x 10 = 28
28 ÷ 4 = 7
0.7

4.) 69.5 ÷ 5 = 13.9

5 | 69.5
- 50.0 (x10)
19.5
- 15.0 (x3)
4.5
- 4.5 (x0.9)
0

4.5 x 10 = 45
45 ÷ 5 = 9
0.9

5.) 87.2 ÷ 2 = 43.6

2 | 87.2
- 80.0 (x 40)
7.2
- 6.0 (x 3)
1.2
- 1.2 (x 0.6)
0

1.2 x 10 = 12
12 ÷ 2 = 6
0.6

6.) 85.2 ÷ 3 = 28.4

3 | 85.2
- 60.0 (x 20)
25.2
- 24.0 (x 8)
1.2
- 1.2 (x 0.4)
0

1.2 x 10 = 12
12 ÷ 3 = 4
0.4

7.) 86.8 ÷ 4 = 21.7

4 | 86.8
- 80.0 (x 20)
6.8
- 4.0 (x 1)
2.8
- 2.8 (x 0.7
0

2.8 x 10 = 28
28 ÷ 4 = 7
0.7

8.) 81.5 ÷ 5 = 16.3

5 | 81.5
- 50.0 (x 10)
31.5
- 30.0 (x 6)
1.5
- 1.5 (x 0.3
0

1.5 x 10 = 15
15 ÷ 5 = 3
0.3

9.) a) 94.4 ÷ 8 = 11.8

8 | 94.4
- 80.0 (×10)
14.4
- 8.0 (×1)
6.4
- 6.4 (×0.8)
0

6.4 × 10 = 64
64 ÷ 8 = 8
0.8

✓✓

10.) 93.8 ÷ 7 = 13.4

7 | 93.8
- 70.0 (×10)
23.8
- 21.0 (×3)
2.8
- 2.8 (×0.4)
0

2.8 × 10 = 28
28 ÷ 7 = 4
0.4

✓✓

Gwaith tadus

✓✓ Excellent division of decimals using the chunking method.

8-1-15

Lo-To calculate time differences.

| | | | | | |
|---|---|---|---|---|---|
| **Swansea** | **13:30** | | **14:35** | | **15:25** |
| **Neath** | **13:41** | | **14:50** | | **15:37** |
| **Part Talbot Parkway** | **13:49** | | **15:01** | | **15:49** |
| **Bridgend** | **14:05** | | **15:16** | | **16:00** |
| **Cardiff Central** | **14:25** | | **15:57** | | **16:25** |
| **Newport** | **14:42** | | **16:09** | | **16:39** |
| **Bristol Temple Meads** | | **15:45** | | **16:45** | |
| **Bristol Parkway** | **15:00** | | **16:30** | | **17:00** |
| **Bath Spa** | | **15:57** | | **16:57** | |
| **Swindon** | | **16:30** | **16:04** | **17:25** | **17:29** |
| **Reading** | **15:48** | **16:57** | **16:34** | **17:54** | **17:58** |
| **Gatwick Airport** | **15:50** | | | | |
| **Slough** | **16:24** | **17:24** | **16:48** | **18:17** | **18:37** |
| **London Paddington** | **16:46** | **17:27** | **17:10** | **18:25** | **18:49** |

1a.) 14:42 //

1b.) 11 minutes, 42 minutes — 53 minutes //

13:49 — 14:00 — 14:42

2a.) 17:10 //

2b.) 26 minutes, 10 minutes — 36 minutes //

16:34 — 17:00 — 17:10

3a.) 16:48 //

3b.) 3 minutes, 48 minutes — 51 minutes //

15:57 — 16:00 — 16:48

4a.) 15:48 //

42 + 19 = 61 — 2 hours and 1 minute

4b.) 19 minutes, 1 hour, 48 minutes

13:41 — 14:00 — 15:00 — 15:48

46 + 18 = 64 — 2 hours and 4 minutes //

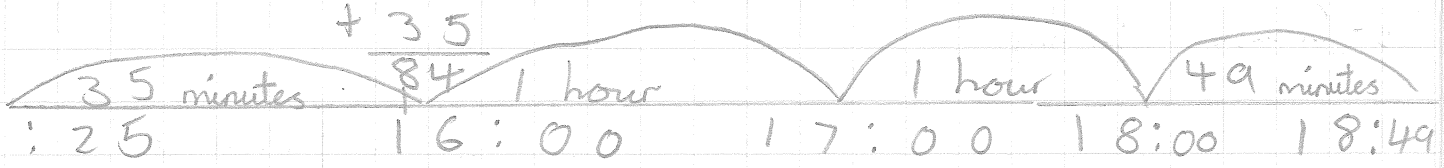
5a.) 14:42 //

5b.) 18 minutes, 1 hour, 46 minutes

14:42 — 15:00 — 16:00 — 16:46

6a. 15:25 // 49 + 35 = 84 // 3 hours and 24 minutes //

6b.




Well done . Good calculation of the time differences.

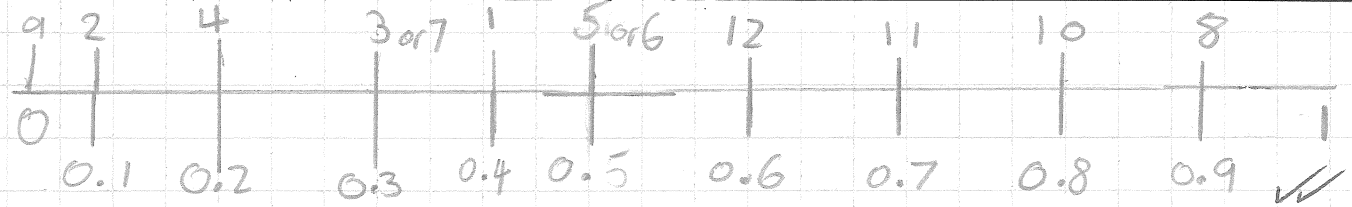
⇒ Have another look at 4b.

Time difference between 13:41 and 15:48.

13-1-15

L6 - Calculate Probability

| 1.) Event | Chance | Probability |
|---|---|---|
| 1.) yellow | 4 in 10 | $\frac{4}{10}$ or $\frac{2}{5}$ ✓✓ 0.4 |
| 2.) Red | 1 in 10 | $\frac{1}{10}$ 0.1 |
| 3.) Pink | 3 in 10 | $\frac{3}{10}$ ✓ 0.1 |
| 4.) Blue | 2 in 10 | $\frac{2}{10}$ or $\frac{1}{5}$ ✓✓ 0.2 |
| 5.) Red or yellow | 5 in 10 | $\frac{5}{10}$ or $\frac{1}{2}$ ✓✓ 0.5 |
| 6.) Pink or Blue | 5 in 10 | $\frac{5}{10}$ or $\frac{1}{2}$ ✓✓ 0.5 |
| 7.) Blue or Red | 3 in 10 | $\frac{3}{10}$ 0.3 ✓✓ |
| 8.) not taking a Red | 9 in 10 | $\frac{9}{10}$ 0.9 ✓✓ |
| 9.) Green | 0 in 10 | 0 |
| 10.) not taking a blue | 8 in 10 | $\frac{8}{10}$ or $\frac{4}{5}$ ✓✓ 0.8 |
| 11.) not taking a Pink | 7 in 10 | $\frac{7}{10}$ ✓✓ 0.7 |
| 12.) not taking a yellow | 6 in 10 | $\frac{6}{10}$ ✓✓ 0.6 |




✓✓ Da cavan

Great probability calculations.

15.1.15

# Gardens 1: Twigs and Leaves

Twigs 2
Leaves 8

Twigs 0
Leaves 0

Twigs 3
Leaves 11

Twigs 1
Leaves 5

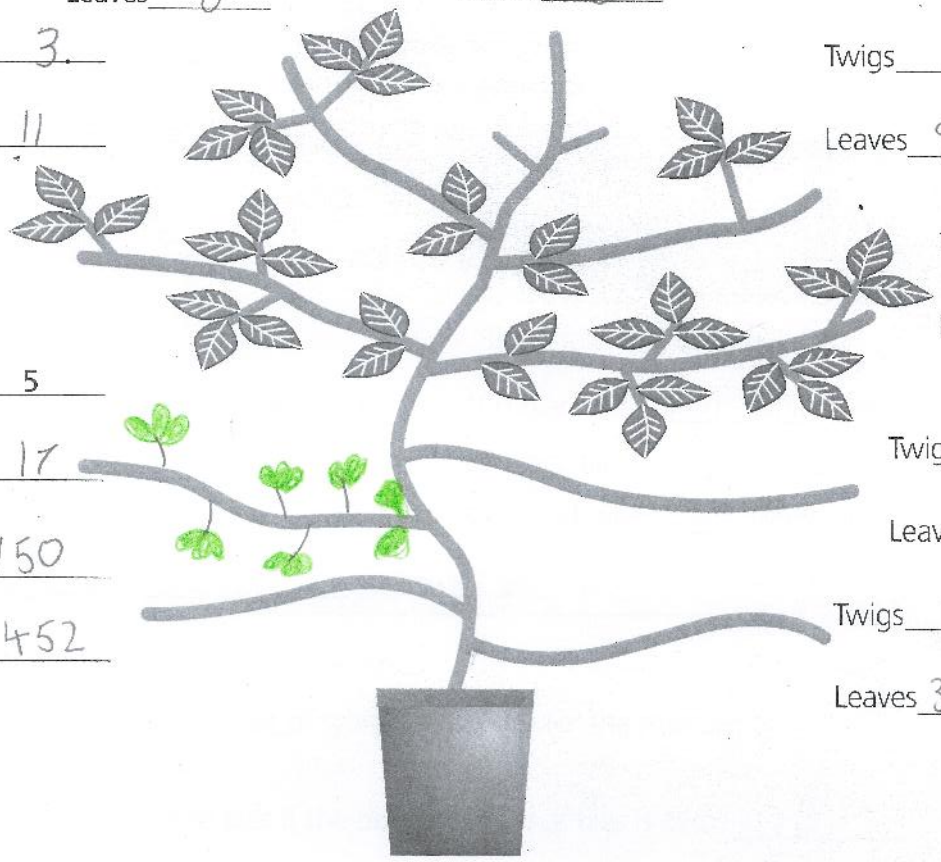
Twigs 4
Leaves 14

Twigs 5
Leaves 17

Twigs 0
Leaves 2

Twigs 150
Leaves 452

Twigs 100
Leaves 302



Explain how to get the number of leaves if you know the number of twigs. When you know the number of twigs, you times it by 3, then add 2

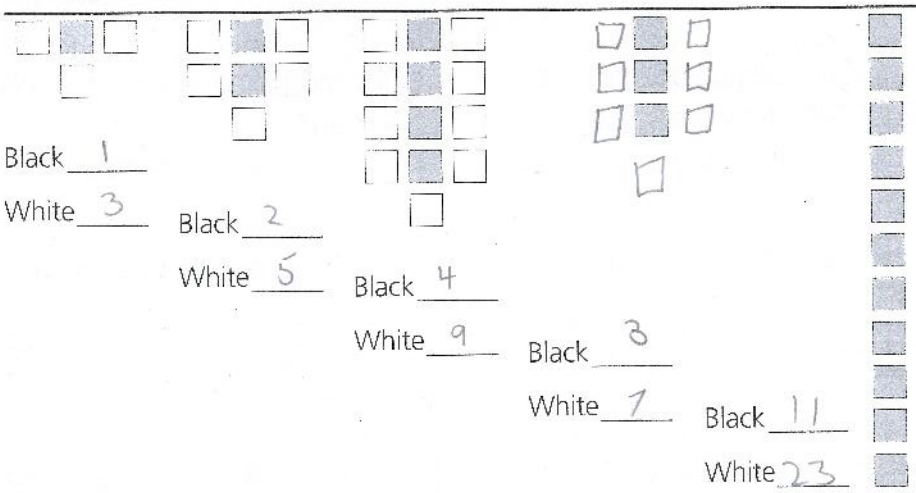
Can you write it another way? (T x 3) + 2 = L



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# Gardens 2: Black and White Tiles

## Paving tiles




1. Fill in the number of white tiles for: 100 black tiles 201 white tiles
   17 black tiles 35 white tiles
   333 black tiles 667 white tiles

2. Number of white tiles = (2×B) + 1 = W

3. Write your expression in symbols.

   Use *w* for the number of white tiles and *b* for the number of black tiles.

4. How many white tiles if the number of black tiles is zero? 0

5. Fill in the table with your results, in some order:

| Number of black tiles | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Number of white tiles | 0 | 3 | 5 | 7 | 9 | 11 | 13 |

6. Compare the black and white tiles pattern with the twigs and leaves pattern.

   a. What is similar?
   They both involve times and adding!

   b. What is different?

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15.1.15

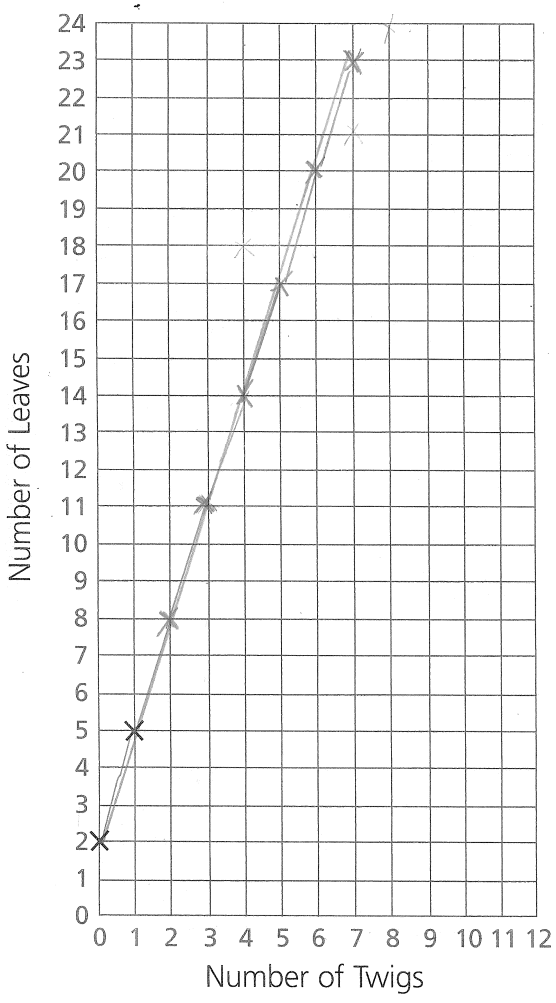
# Gardens 3

## Graphs

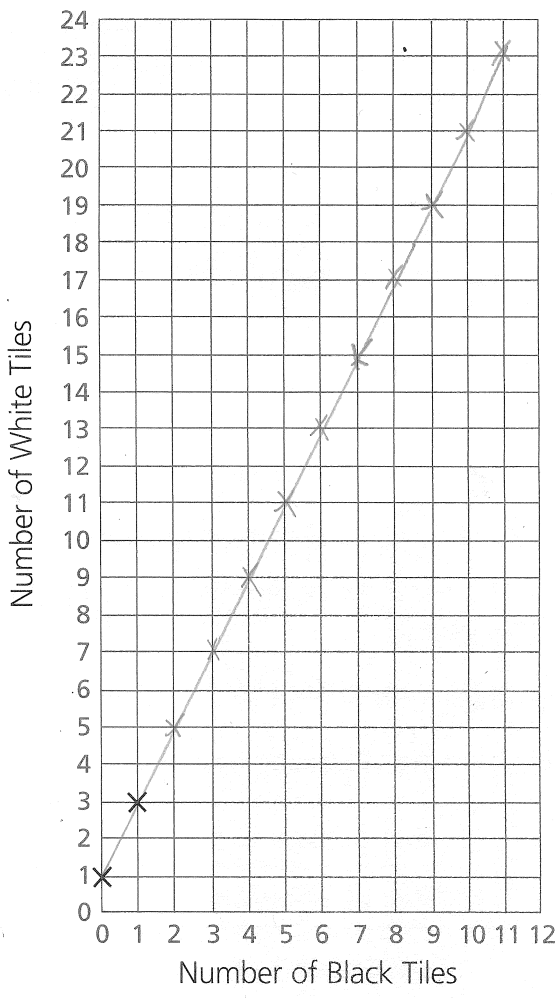
1. Plot the number pairs from your twigs and leaves table. The first two are done for you.

2. Plot the number pairs from your black and white tiles table. The first two are done for you.

Twigs and Leaves




Black and White Tiles




What do you notice about the two graphs?

One has a steeper gradient than another.

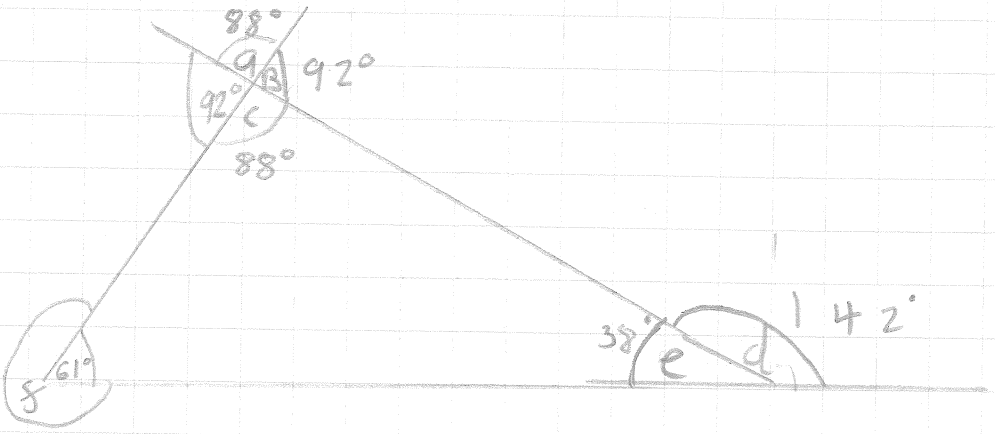


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20-1-15

LO - To calculate missing angles on a straight line, around a point and in a triangle

1.




$$\begin{array}{r} {}^{1}\cancel{3}{}^{15}\cancel{6}0^\circ \\ -\ 61^\circ \\ \hline g = 299^\circ \end{array}$$ (angles around a point = 360°)

b = 92° - (opposite angles) //

a and c = 92° × 2 = 184°

360° − 184° = 176 ÷ 2 = 88° (opposite angles) //

e = 61° + 81° = 142°

$$\begin{array}{r} 180 \\ -\ 142 \\ \hline e = 38^\circ \end{array}$$

angles in a triangle = 180° − 61 − 88 = 31°

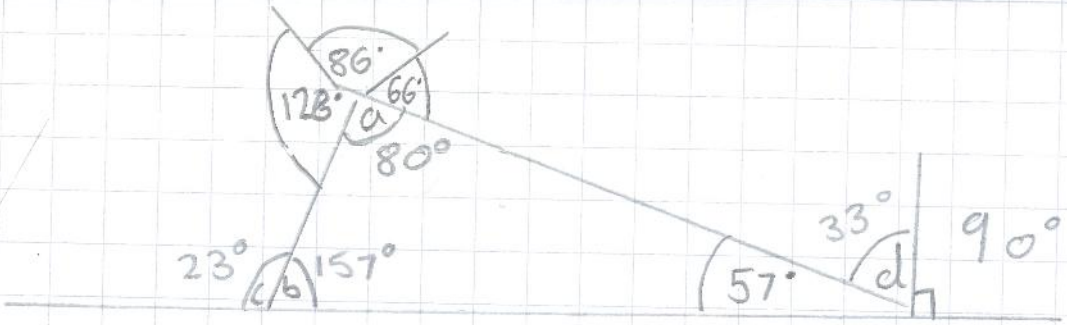
e = 31°

$$\begin{array}{r} {}^{1}\cancel{1}{}^{7}\cancel{8}0 \\ -\ 149 \\ \hline 31 \end{array}$$

d = 180° - angles on a straight line = 180°

$$\begin{array}{r} -\ 38 \\ \hline d = 142^\circ \end{array}$$

2.




a. = angles around a point = 360°

$$\begin{array}{r} 128^\circ \\ +\ 86^\circ \\ \hline 66^\circ \\ \hline 280^\circ \\ {\scriptstyle 1\ 2} \end{array} \qquad \begin{array}{r} {\scriptstyle 2}3\,{\scriptstyle 1}60^\circ \\ -\ 280^\circ \\ \hline 80^\circ \end{array}$$

$a = 80^\circ$ //

d = angles on a straight line = 180°

$$\begin{array}{r} 90^\circ \\ +\ 57^\circ \\ \hline 147^\circ \end{array} \qquad \begin{array}{r} {\scriptstyle 1}{\scriptstyle 7}{\scriptstyle 1}80^\circ \\ -\ 147^\circ \\ \hline 33^\circ \end{array}$$

$d = 33^\circ$ //

b. = angles on a straight line = 180°

$$\begin{array}{r} {\scriptstyle 1}{\scriptstyle 7}{\scriptstyle 1}80^\circ \\ -\ 57^\circ \\ \hline 23^\circ \end{array} \qquad \begin{array}{r} {\scriptstyle 1}{\scriptstyle 7}{\scriptstyle 1}80^\circ \\ -\ 23^\circ \\ \hline 157^\circ \end{array}$$

$b = 157$

angles in a triangle = 180°

$b = 43^\circ$

$$\begin{array}{r} 57 \\ +\ 80 \\ \hline 137 \end{array}$$

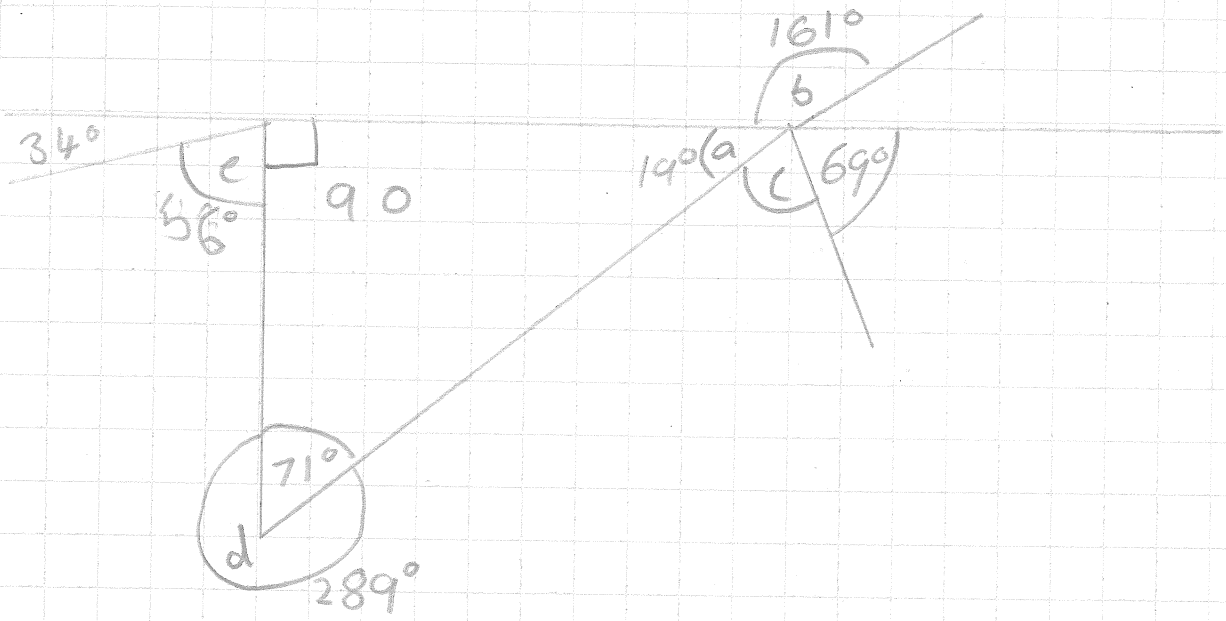
$$\begin{array}{r} {\scriptstyle 1}{\scriptstyle 7}{\scriptstyle 1}80 \\ -\ 137 \\ \hline 43 \end{array}$$

c. = angles on a straight line = 180°

$$\begin{array}{r} {\scriptstyle 1}{\scriptstyle 7}{\scriptstyle 1}80^\circ \\ -\ 157^\circ \\ \hline 023^\circ \end{array}$$

$c = 23^\circ$

3.




e = angles on a straight line = 180°

$$\begin{array}{r} {}^{7}\cancel{1}\,{}^{1}\cancel{8}0^\circ \\ -\ 34^\circ \\ \hline 146^\circ \end{array} \quad e = 146^\circ$$

Look again You have missed out the right angle in your calculation.

$$e = 56^\circ$$

$$\begin{array}{r} 90 \\ +\ 34 \\ \hline 124 \end{array} \qquad \begin{array}{r} {}^{7}\cancel{1}80 \\ -\ 124 \\ \hline 56 \end{array}$$

d = angles on a point = 360°

$$\begin{array}{r} {}^{2}\cancel{3}\,{}^{1}\cancel{6}0^\circ \\ -\ 71^\circ \\ \hline 289^\circ \end{array} \quad d = 289^\circ \quad \checkmark\checkmark$$

a = angles on a triangle = 180°

$$\begin{array}{r} {}^{8}\cancel{9}\,{}^{1}\cancel{0}^\circ \\ -\ 71^\circ \\ \hline 19^\circ \end{array} \quad a = 19^\circ \quad \checkmark\checkmark$$

Well done

b = angles on a straight line = 180°

$$\begin{array}{r} {}^{7}\cancel{1}\,{}^{1}\cancel{8}0^\circ \\ -\ 19^\circ \\ \hline 161^\circ \end{array} \quad b = 161^\circ \quad \checkmark\checkmark$$

Very good use of the angle rules to solve the angle problems

=> Corrections please.

c = angles on a straight line = 180°

$$c = 92 \qquad \begin{array}{r} 92 \\ +\ 69 \\ \hline 161 \end{array} \qquad \begin{array}{r} 161 \\ +\ 19 \\ \hline 180 \end{array} \quad \checkmark\checkmark$$

21-1-15

LO - To calculate temperature differences across zero.

1.) -35, -5, 5 //

2.) -11, 2, 41 //

3.) -4, -1, 34 //

4.) -2, 13, 20 //

5.) -22, -1, 21 //

6.) -50, -15, 0 //

7.) -14, 4, 46 //

8.) -22, -12, -9 //

9.) -38, 0, 8 //

10.) -37, -27, 47 //

11a) 0° C //

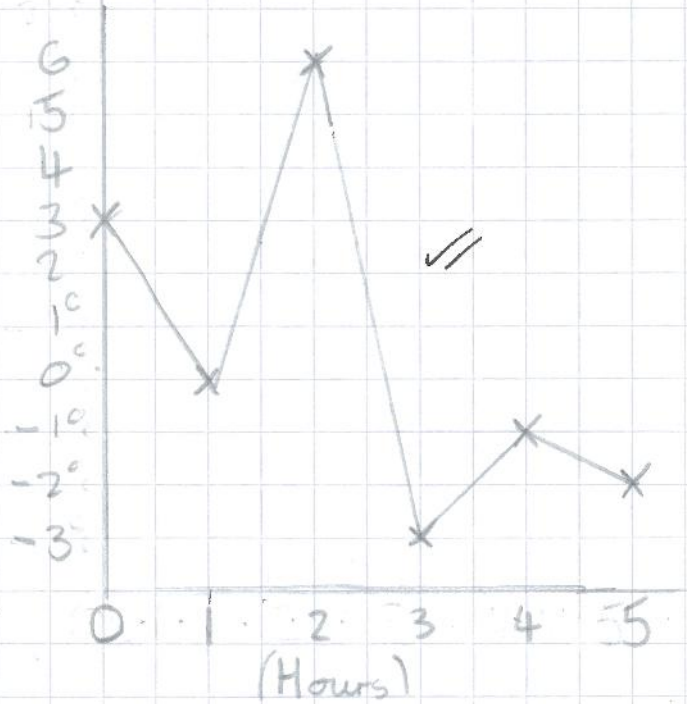
11b) 6° C //

11c) -3° C //

11d) -1° C //

11e) -2° C //

Graph showing temperature changes over a period of time



12a) 6°C //

12b) 3°C //

12c) 10°C //

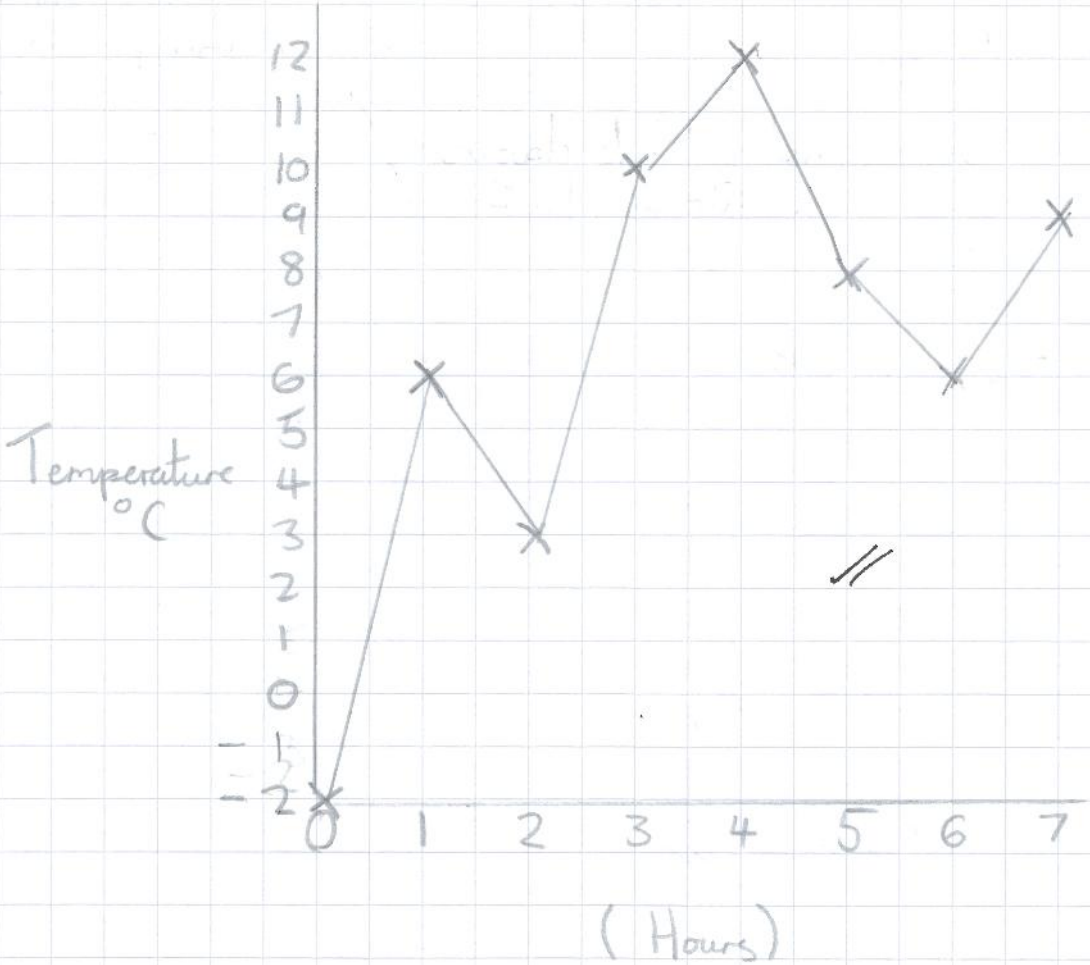
12d) 12°C //

12e) 8°C //

12f) 10°C then 6°C //

12g) 3°C then 9°C //

Graph showing temperature changes over a period of time




Arddorchog . Excellent calculation of the temperature differences across zero.

22 - 1 - 15

LO - Ratio and proportion.

1a.) Proportion red = $\frac{6}{16} = \frac{3}{8}$ ✓✓

1b.) Proportion white = $1 - \frac{3}{8} = \frac{5}{8}$ ✓✓

2a.) Proportion red = $\frac{4}{16} = \frac{2}{8}$ ✓✓ *

2b.) Proportion white = $1 - \frac{2}{8} = \frac{6}{8}$ ✓✓ *

3a.) Proportion red = $\frac{14}{25}$ ✓✓

3b.) Proportion white = $1 - \frac{14}{25} = \frac{11}{25}$ ✓✓

4a.) Proportion red = $\frac{4}{12} = \frac{2}{6}$ ✓✓

4b.) Proportion white = $1 - \frac{2}{6} = \frac{4}{6}$ ✓✓ *

5a.) Proportion red = $\frac{8}{36} = \frac{4}{18}$ ✓✓ *

5b.) Proportion white = $1 - \frac{4}{18} = \frac{2}{9}$ ✓✓

6a.) Proportion red = $\frac{6}{18} = \frac{3}{9}$ ✓✓ *

6b.) Proportion white = $1 - \frac{3}{9} = \frac{6}{9}$ ✓✓

7a.) Proportion red = $\frac{8}{16} = \frac{4}{8} = \frac{1}{2}$ ✓✓

7b.) Proportion white $= 1 - \frac{1}{2} = \frac{1}{2}$ ✓✓

8a.) Proportion red $= \frac{10}{15}$ ✓✓ *

8b.) Proportion white $= 1 - \frac{10}{15} = \frac{5}{15}$ ✓✓ *

9.) Proportion $= \frac{6}{24} = \frac{1}{4}$ ✓✓

10.) Proportion $= \frac{8}{24}, = \frac{4}{12} = \frac{1}{3}$ ✓✓

11.) Proportion $= \frac{10}{24} = \frac{5}{12}$ ✓✓

12.) Proportion $= \frac{12}{24} = \frac{6}{12} = \frac{3}{6} = \frac{1}{2}$ ✓✓

13.) Proportion $= \frac{9}{24} = \frac{3}{8}$ ✓✓

14.) Porportion $= \frac{11}{24}$ ✓✓

15.) Propotion $= \frac{7}{24}$ ✓✓

16.) Proportion $= \frac{15}{24}$ ✓✓

17.) Proportion $= \frac{60}{105}$ ?

There are 15 tossees. ?

✓✓. Excellent calculations of ratio and proportion Gwauth da.

* Can you simplify these fractions?

23-1-15

L O - To apply ratio and proportion skills.

1.) 10 : 20
1 : 2 //

2.) 16 : 14
8 : 7 //

3.) 24 : 6
4 : 1 //

4.) 8 : 22
4 : 11 //

5.) 7 : 21
1 : 3 //

6.) 11 : 20 //

7.) 12 : 19 //

8.) 30 biscuits

2 : 1
plain : chocolate
20 : 10

$\frac{1}{3}$ are chocolate which means $\frac{1}{3}$ of 30 = 10 chocolate //

$\frac{2}{3}$ are plain which means $\frac{2}{3}$ of 30 = 20 plain

9.) 20 biscuits
3 : 1
ginger : chocolate
$\frac{1}{4}$ are chocolate which means $\frac{1}{4}$ of 20 = 5 chocolate //
$\frac{3}{4}$ are ginger which means $\frac{3}{4}$ of 20 = 15 ginger.

10.) 25 biscuits
1 : 4
waser : chocolate

$\frac{4}{5}$ are chocolate which means $\frac{4}{5}$ of 25 = 20 chocolate //

$\frac{1}{5}$ are waser which means $\frac{1}{5}$ of 25 = 5 waser

11.) 20 biscuits
2 : 3
grait : chocolate

$\frac{2}{5}$ are grait which means $\frac{2}{5}$ of 20 = 8 grait.

$\frac{3}{5}$ are chocolate which means $\frac{3}{5}$ of 20 = 12 chocolate. //

12.) 21 biscuits
2 : 5
digestive : chocolate

$\frac{2}{7}$ are digestive which means $\frac{2}{7}$ of 21 = 6 digestive

$\frac{5}{7}$ are chocolate which means $\frac{5}{7}$ of 21 = 15 chocolate.
//

13.) 24 biscuits
5 : 3
cheese : chocolate

Gwaith da.
Excellent use of your ratio and proportion skills.

$\frac{5}{8}$ are cheese which means $\frac{5}{8}$ of 24 = 15 cheese

$\frac{3}{8}$ are chocolate which means $\frac{3}{8}$ of 24 = 9 chocolate.
//

29-1-15

Lo-To accurately draw and measure angles.

1.) Estimate = 83°
Measure = 81° //

2.) Estimate = 105°
Measure = 115° //

3.) Estimate = 135°
Measure = 125° //

4.) Estimate = 30°
Measure = 40° //

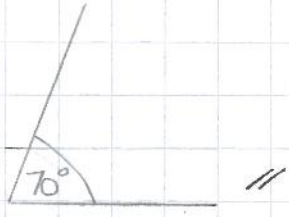
5.) Estimate = 160°
Measure = 145° //

6.) Estimate = 70°
Measure = 55° //

7.) Estimate = 150°
Measure = 140° //

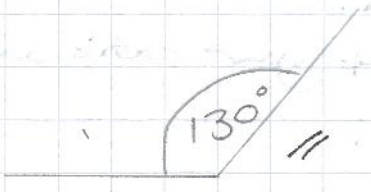
8.) Estimate = 100°
Measure = 100° //

9.)



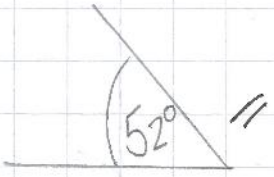

//

10.)



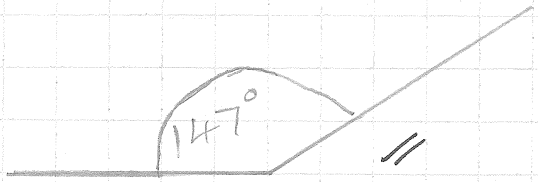

//

11.)

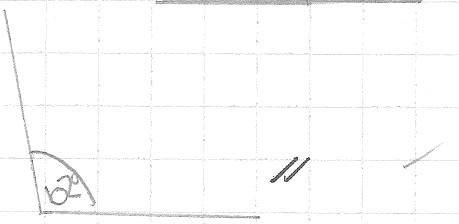



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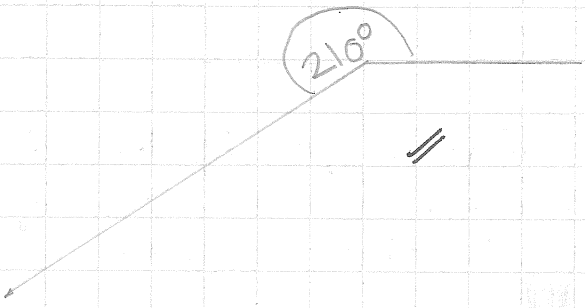
12.)




13.)




14.)




Daiawn

Great measuring and drawing of the angles.

30-1-15

Lo-To name and identify the properties of 3D shapes.

A.) cuboid //

b.) pyramid //

c.) cylinder //

d.) cone //

e.) prism //

g.) pyramid //

g.) cube //

h.) pyramid //

i.) prism //

j.) prism //

1.) 5 //

2.) 12 x

3.) 7 x

4.) 12 x

5.) 9 x

6.) 1 //

7.) B //

8.) i //

9.) e //

10.) h //

11.) g //

12.) j //

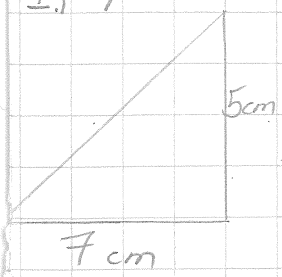
13.) e x

Well done . Good identification of the 3D shapes. We need to have another look at the vertices together.
⇒ See me please.

2-2-15

L.O. To calculate the area of triangles.

1.)




Area of rectangle = 7 × 5 = 35cm

Area of triangle = $\frac{1}{2}$ of 35 = 17.5cm² //

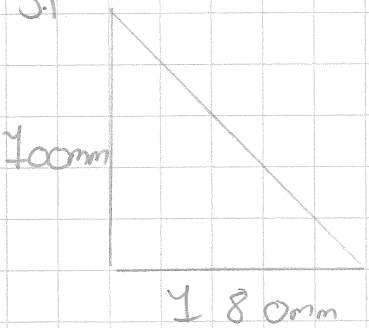
2.)




Area of rectangle = 12 × 6 = 72cm

Area of triangle = $\frac{1}{2}$ of 72 = 36cm² //

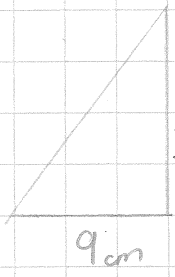
3.)




Area of rectangle = 180 × 100 = 18,000cm

Area of triangle = $\frac{1}{2}$ of 18,000 = 9000cm² //

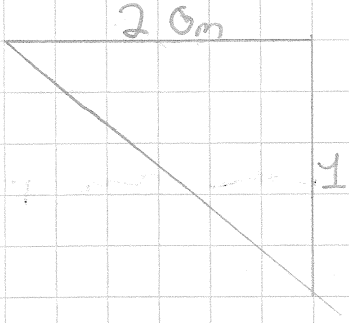
4.)




Area of rectangle = 18 × 9 = 162cm

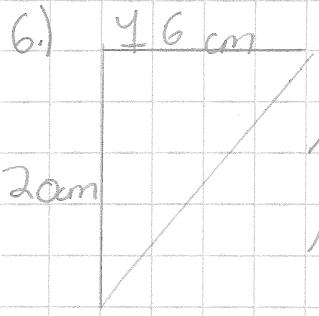
Area of triangle = $\frac{1}{2}$ of 162 = 81cm² //

5.)



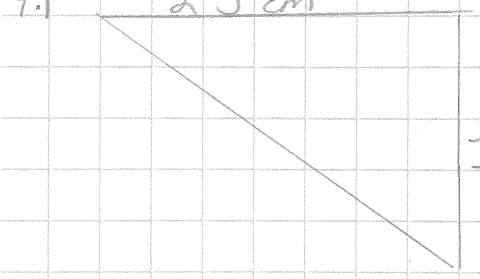

Area of rectangle = 20 × 12 = 240m

Area of triangle = $\frac{1}{2}$ of 240 = 120m² //

6.) 

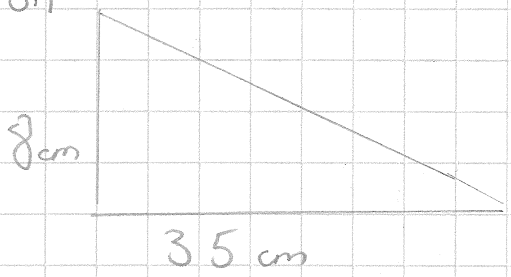

Area of rectangle = 20 x 16 = 320 cm

Area of triangle = $\frac{1}{2}$ of 320 = 160 $cm^2$ //

7.) 

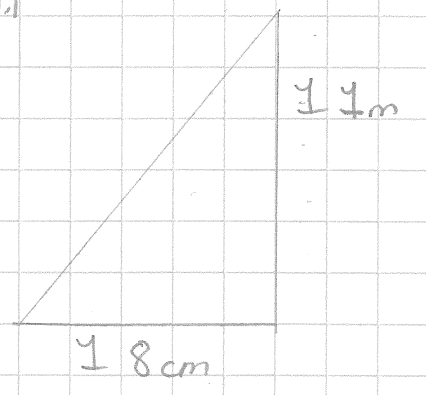

Area of rectangle = 25 x 12 = 300cm

Area of triangle = $\frac{1}{2}$ of 210 = 150 $cm^2$ //

8.) 

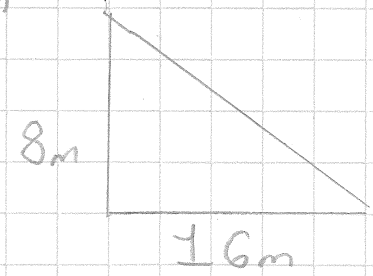

Area of rectangle = 35 x 8 = 280cm

Area of triangle = $\frac{1}{2}$ of 280 = 140 $cm^2$ //

9.) 


Area of rectangle = 18 x 11 = 198 $m^2$

Area of triangle = $\frac{1}{2}$ of 190 = 99 $m^2$ //

10.) 


Area of rectangle = 16 x 8 = 128m

Area of triangle = $\frac{1}{2}$ of 128 = 64 $m^2$ //

Well done

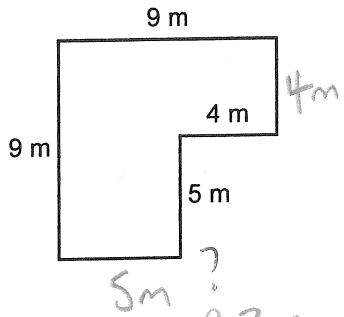
Excellent calculation of the areas of triangles.

3-2-15

LO - calculating perimeter and area of compound shapes.

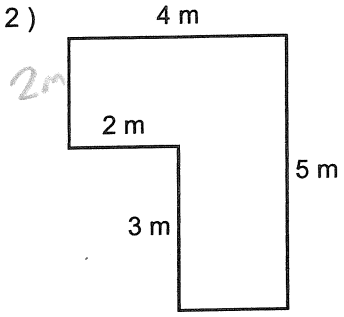
**Calculate the perimeter of each shape.**

(1)



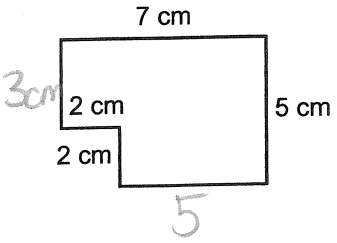

Perimeter: 32m

(2)



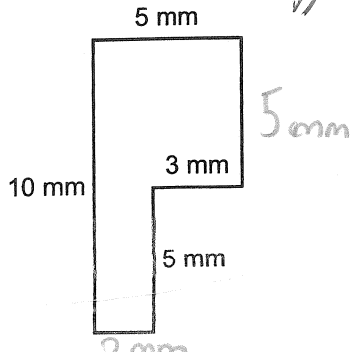

Perimeter: 18m

(3)



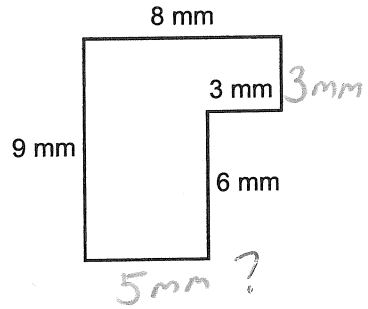

Perimeter: 24cm

(4)



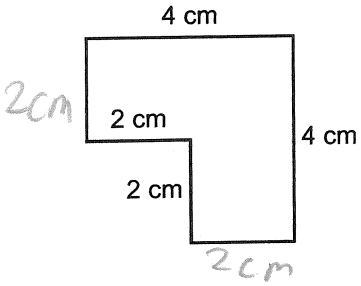

Perimeter: 30mm

(5)



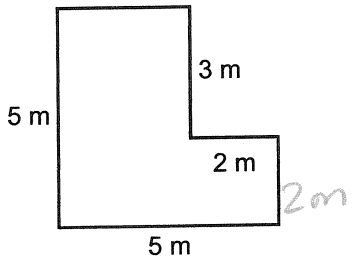

Perimeter: 31mm

(6)



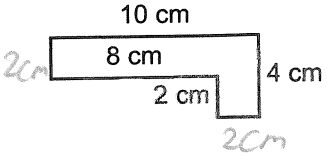

Perimeter: 16cm

(7)



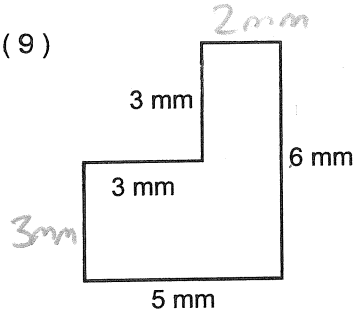

Perimeter: 20m

(8)



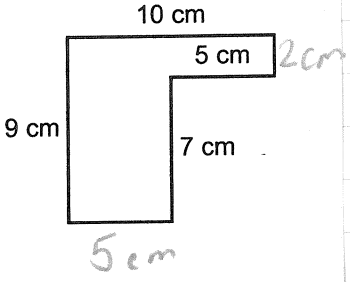

Perimeter: 28cm

(9)



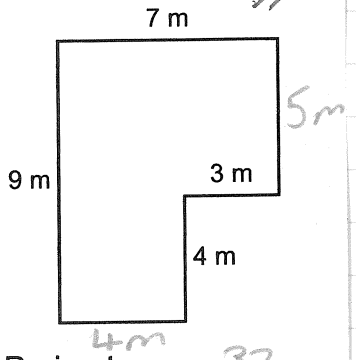

Perimeter: 22mm

(10)



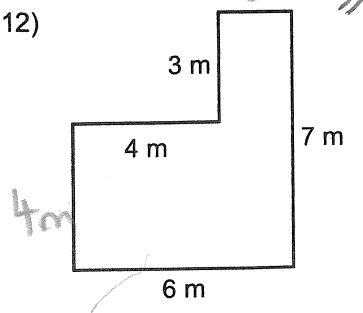

Perimeter: 38cm

(11)




Perimeter: 32m

(12)

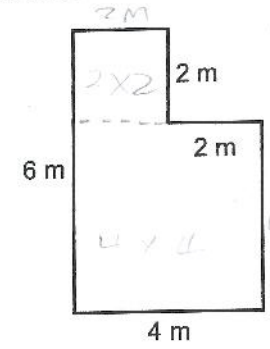



Perimeter: 26m

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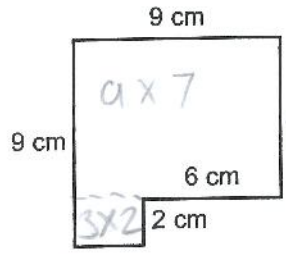
## Calculate the area of each shape.

(1)



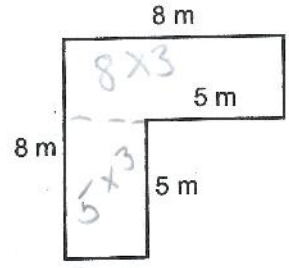

Area: 20 m²

(2)



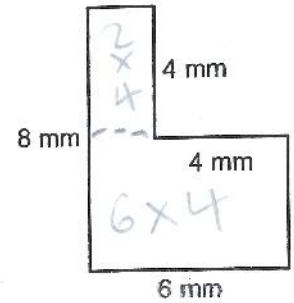

Area: 69 cm²

(3)



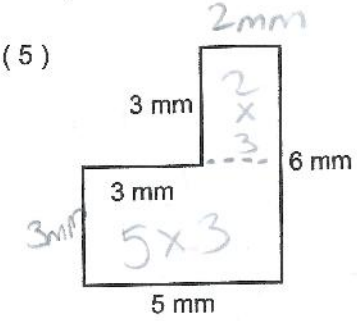

Area: 39 m²

(4)



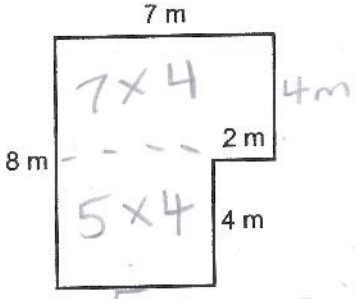

Area: 32 mm²

(5)



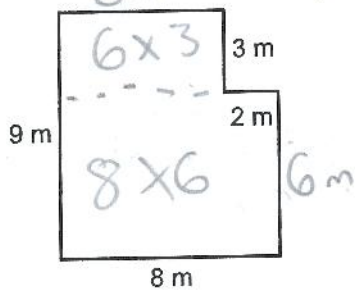

Area: 21 mm

(6)



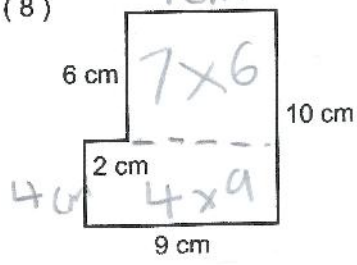

Area: 48 m²

(7)



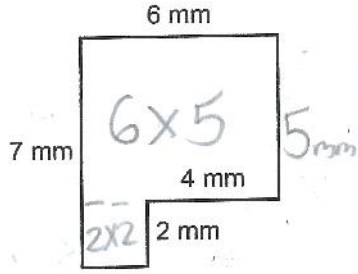

Area: 66 m²

(8)



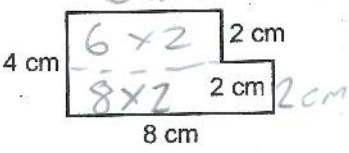

Area: 78 cm²

(9)



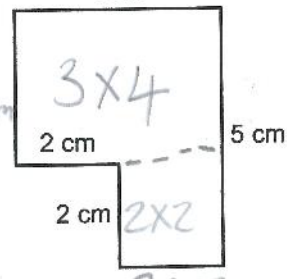

Area: 34 mm²

(10)



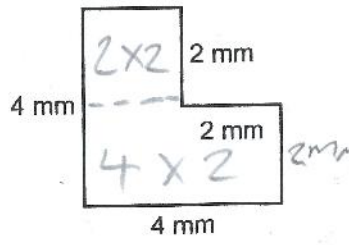

Area: 28 cm²

(11)




Area: 16 cm²

(12)




Area: 12 mm²

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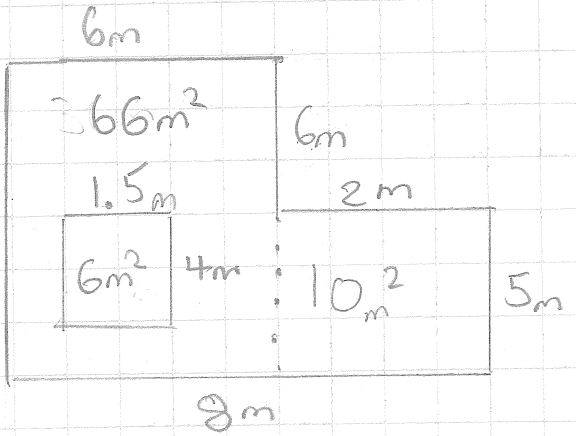


Gwaith da calculating the area and perimeter of compound shapes.

5-2-15

LO - To calculate the area of compound shapes.

1.)

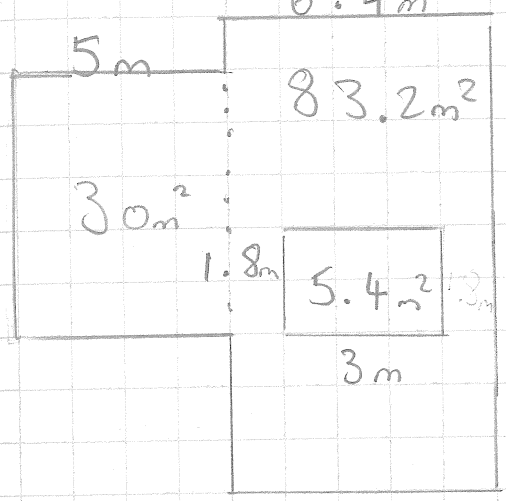



66m² + 10m² = 76m²

76m²
- 6m²
70m²

A = 70m² //

2.)




| X | 10 | 3 |
|---|---|---|
| 6 | 60 | 18 |
| 0.4 | 4 | 1.2 |

60 + 18 = 78

4 + 1.2 = 5.2

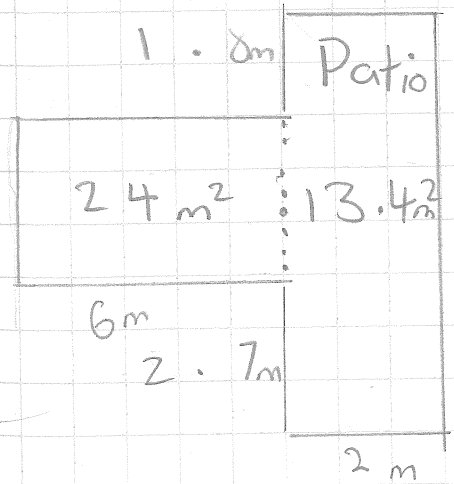
78 + 5.2 = 83.2m²

83.2m²
+ 30.0m²
113.2m²

113.2m²
- 5.4m²
107.8m²

A = 107.8m² //

3.)




4m + 2.7m = 6.7

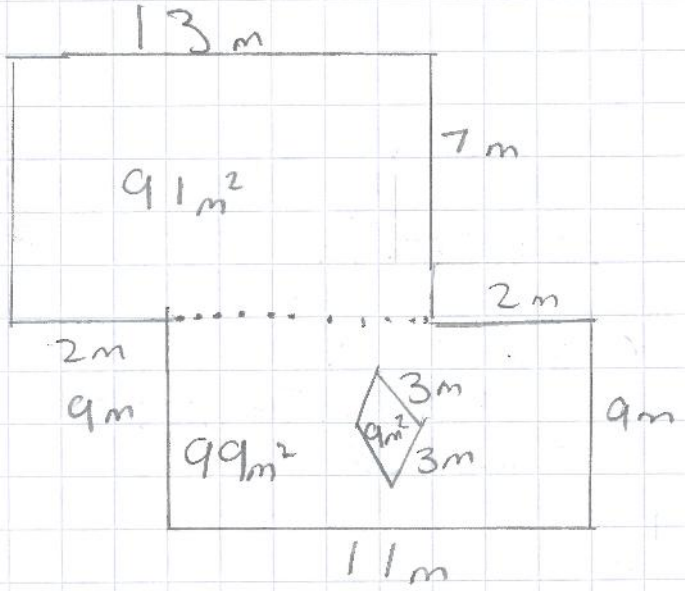
| X | 6 | 0.7 |
|---|---|---|
| 2 | 12 | 1.4 |

12 + 1.4 = 13.4m²

A = 37.4m² //

24.0m²
+ 13.4m²
37.4m²

4.)



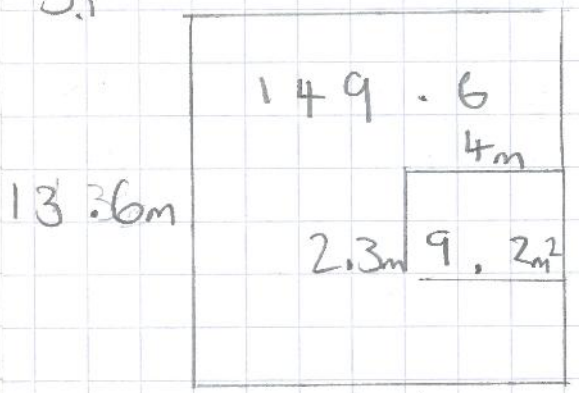

| X | 10 | 3 |
|---|---|---|
| 7 | | |
| 7 | 70 | 21 |

$$\begin{array}{r} 70 \\ +\ 21 \\ \hline 91\,m^2 \end{array}$$

$$\begin{array}{r} 99\,m^2 \\ +\ 91\,m^2 \\ \hline 190\,m^2 \end{array} \qquad \begin{array}{r} 190\,m^2 \\ -\ 9\,m^2 \\ \hline 181\,m^2 \end{array}$$

$A = 181\,m^2$ //

5.)




| 10 | 1 | |
|---|---|---|
| 100 | | 10 |
| | | |
| 3 | 30 | 3 |
| | | |
| 0.6 | 6 | 0.6 |

$100 + 10 = 110\,m$

$30 + 3 = 33\,m$

$6 + 0.6 = 6.6\,m$

$$\begin{array}{r} 110.0\,m \\ +\ 33.0\,m \\ +\ 6.6\,m \\ \hline 149.6\,m^2 \end{array}$$

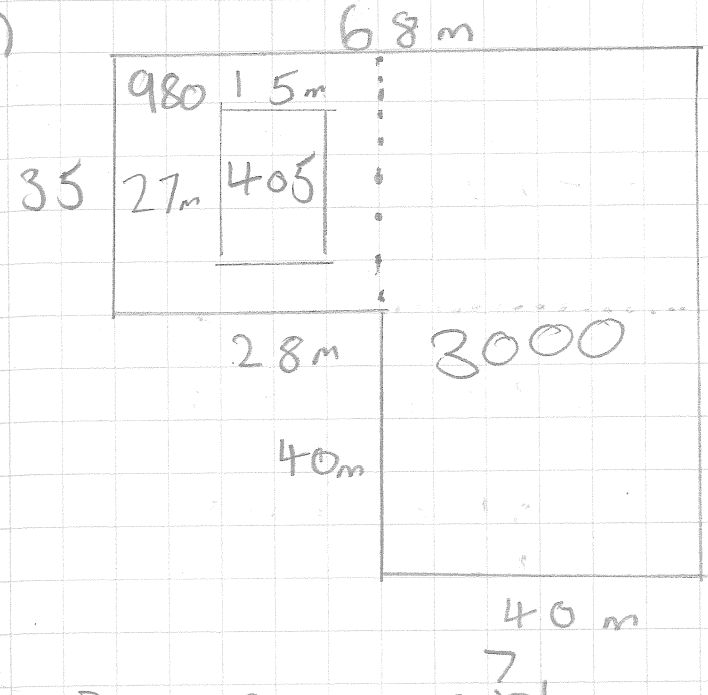
$$A = 149.6\,m^2 - 9.2\,m^2$$

$A = 140.4\,m^2$

$A = 140.4\,m^2$ //

6.)

6.)




| | | | |
|---|---|---|---|
| 27 | 20 | 7 | |
| 10 | 200 | 70 | 270 |
| 5 | 100 | 35 | 135 |
| | | | 405 |
| | | | 1 |

| | | |
|---|---|---|
| | 30 | 5 |
| 20 | 600 | 100 |
| 8 | 240 | 40 |

$3000 + 980 = 3980$

$3980 - 405 = 3575$

$A = 3575\ m^2$ ✓✓

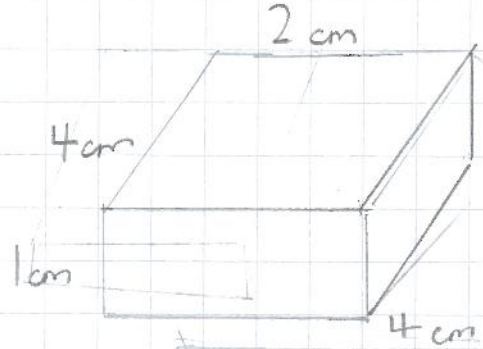
Ardderchog . Excellent calculation of areas of the compound shapes.

⇒ Remember the units .

# 9-2-15

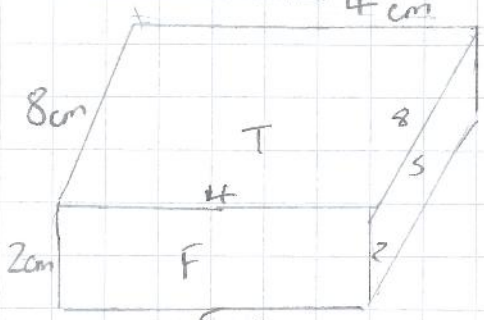
LO - To calculate the surface area of cuboids.

1.)



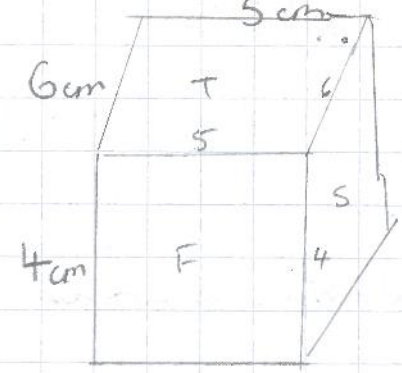

Top = 4 x 2 = 8 cm²
Side = 4 x 1 = 4 cm²
Front = 2 x 1 = 2 cm²
Surface area = (8 + 4 + 2) x 2
= 14 x 2 = 28 cm² ✓✓

2.)




Top = 8 x 4 = 32 cm²
Side = 8 x 2 = 16 cm²
Front = 4 x 2 = 8 cm²
Surface area = 2 x (32 + 16 + 8)
= 56 x 2 = 112 cm² ✓✓

3.)



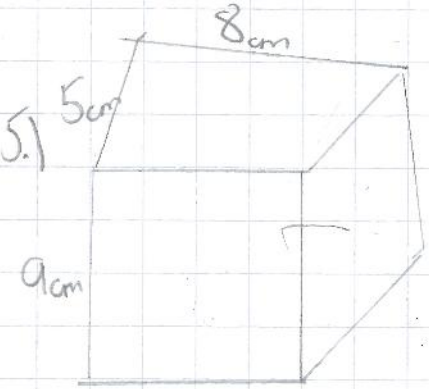

Top = 6 x 5 = 30 cm²
Side = 6 x 4 = 24 cm²
Front = 5 x 4 = 20 cm²
Surface area = 2 x (30 + 24 + 20) = 74 x 2 = 148 cm² ✓✓

4.)




Top = 7 x 6 = 42 cm²
Side = 7 x 3 = 21 cm²
Front = 6 x 3 = 18 cm²
Surface area = x 2 (42 + 21 + 18) = 81 x 2 = 162 cm² ✓✓

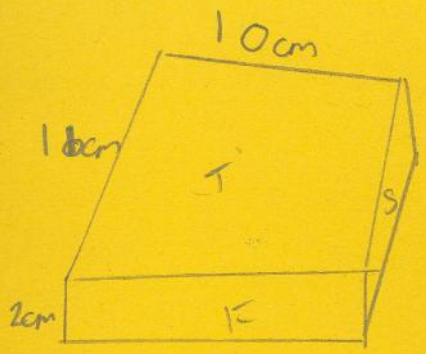
5.)




Top = 5 x 8 = 40 cm²
Side = 9 x 5 = 45 cm²
Front = 9 x 8 = 72 cm²
Surface area = 2 x (40 + 45 + 72) = 157 x 2 = 314 cm² ✓✓

157
+ 157
314
1 1

6.)




Top = $10 \times 11 = 110 cm^2$

Side = $2 \times 11 = 22 cm^2$

Front = $10 \times 2 = 20 cm^2$

√√

Surface Area = $2 \times (110 + 22 + 20) = 152 \times 2 = 304 cm^2$

√√

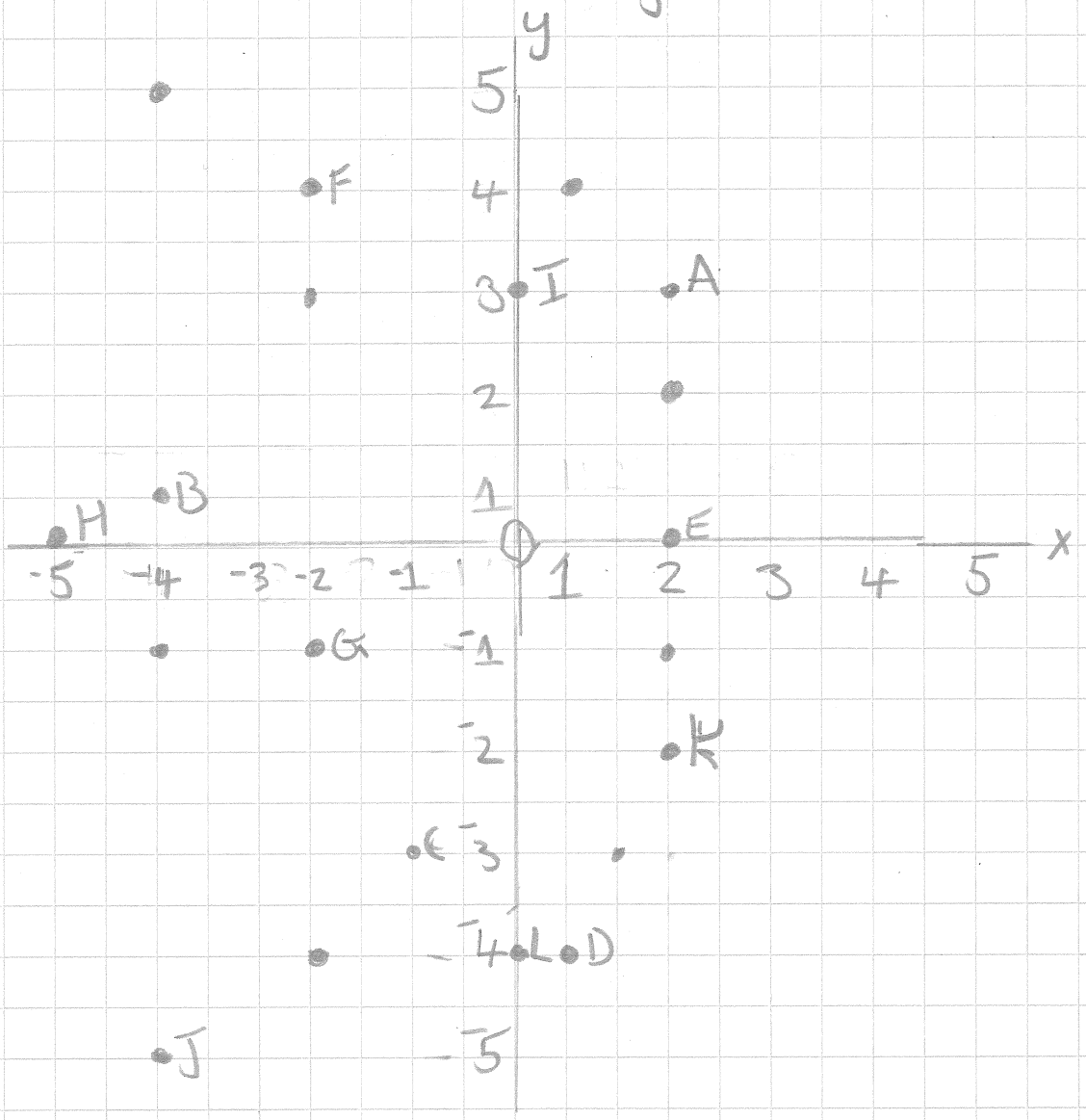
Self assessed

Bendigeding [redacted].

Super calculation of the surface areas of cuboids.

23-2-15

Lo-To read, write and reflect co-ordinates.




1. D (1, 4) //
2. F (-2, -4) //
3. J (-4, 5) //
4. H (-5, 0) //
5. B (-4, -1) //
6. K (2, 2) //
7. A (-2, 3) //
8. G (2, -1) //
9. C (1, -3) //
10. L (0, -4) //
11. E (-2, 0) //
12. I (0, 3) //

Daiawn
Excellent reflection of the coordinates.

24-2-15

LO:- Rotation and translation

1.) A (4, 0) ✓✓

2.) C (2, -1) ✓✓

3.) D (-3, 4) ✓✓

4.) B (9, -1) ✓✓

5.) A (0, 7) ✓✓

6.) B (2, 4) ✓✓

7.) B (8, -1) ✓✓

8.) C (5, 7) ✓✓

9.) 1 unit across, 5 units down. ✓✓

10.) 6 units across, 4 units down. ✓✓

11.) 3 units across, 3 units down. ✓✓

12.) 4 units across, 4 units down. ✓✓

13.) 2 units across, 2 units down. ✓✓

14.) 5 units across, 1 unit down. ✓✓

Dw i'n cyfuno. ✓✓

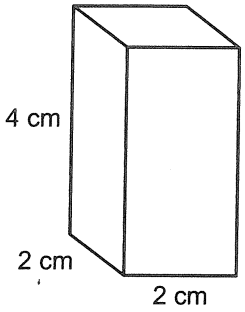
Gwaith da
Super translation of coordinates.

# Calculating Volume

Name: _____ Date: 3-3-15

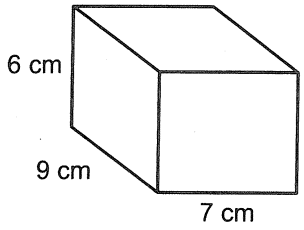
**Calculate the volume of each solid.**

(1)



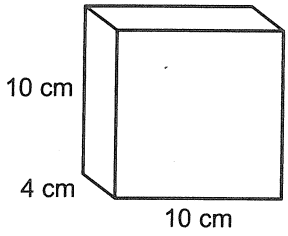

Volume: $16 cm^3$

(2)



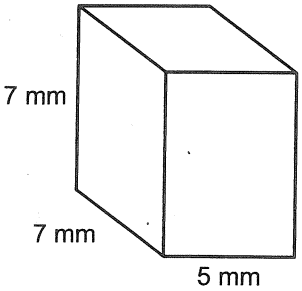

Volume: $378 cm^3$

(3)



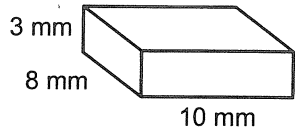

Volume: $400 cm^3$

(4)



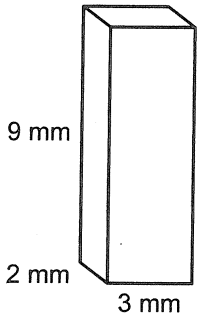

Volume: $245 mm^3$

(5)



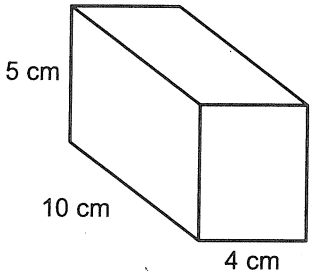

Volume: $240 mm^3$

(6)



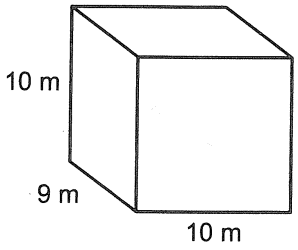

Volume: $54 mm^3$

(7)



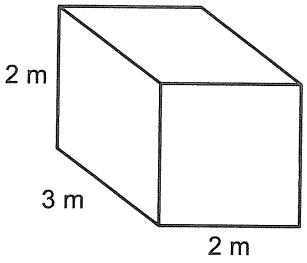

Volume: $200 cm^3$

(8)



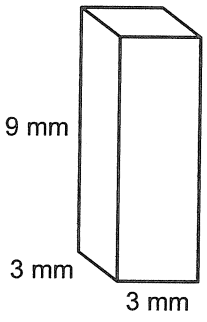

Volume: $900 m^3$

(9)



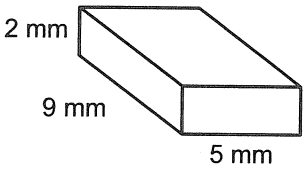

Volume: $12 m^3$

(10)



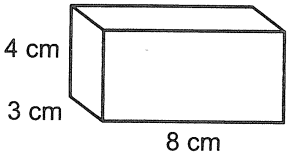

Volume: $81 mm^3$

(11)




Volume: $90 mm^3$

(12)




Volume: $96 cm^3$

Sele assessed

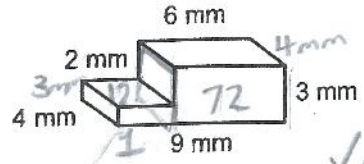
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# Calculating Volume

Name: _____ Date: 3-3-15

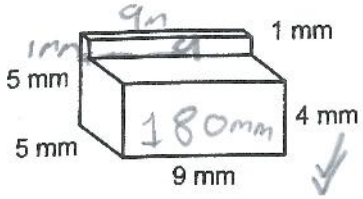
**Calculate the volume of each solid.**

(1)



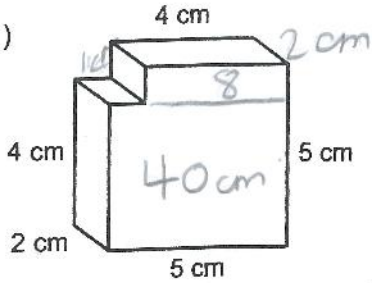

Volume: 84 $mm^3$

(2)



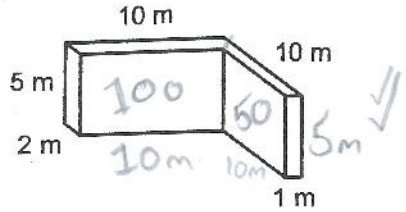

Volume: 189 $mm^3$

(3)



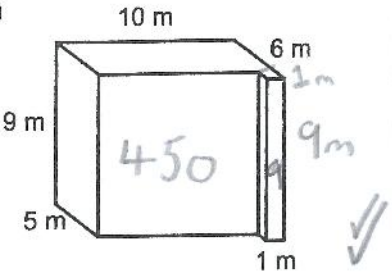

Volume: 48 $cm^3$

(4)



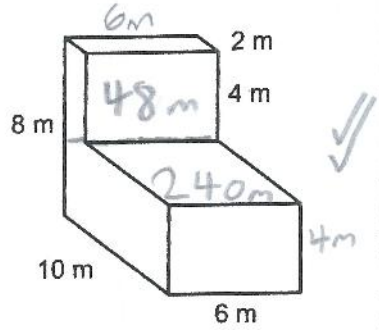

Volume: 150 $m^3$

(5)



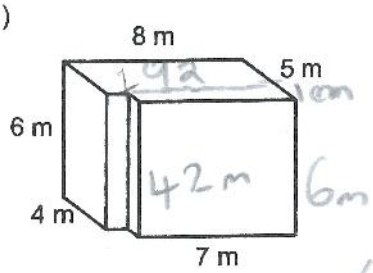

Volume: 459 $m^3$

(6)



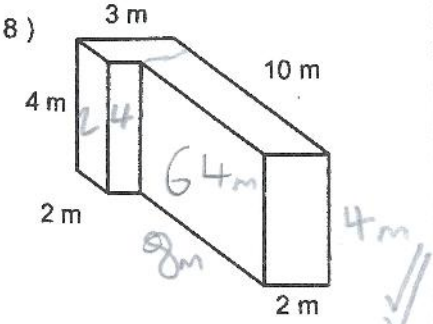

Volume: 288 $m^3$

(7)



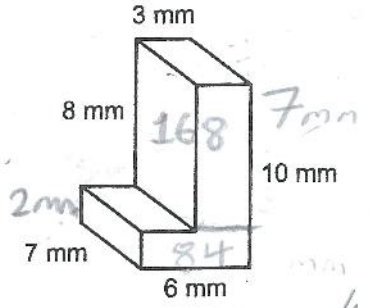

Volume: 234

(8)



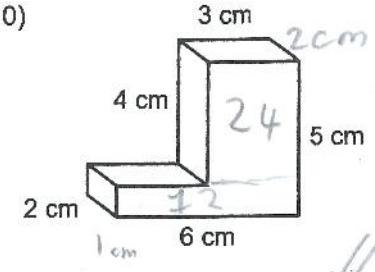

Volume: 88 $m^3$

(9)



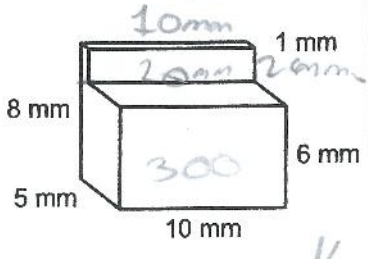

Volume: 252 $mm^3$

(10)



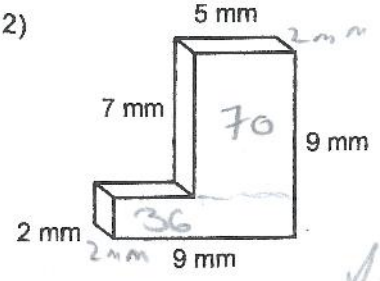

Volume: 36 $cm^3$

(11)




Volume: 320 $mm^3$

(12)




Volume: 106 $mm^3$

Idy assessed

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Excellent volume calculations.

Daiam

93.15

9-3-15

Lo~ To record measurements in different ways.

1a.) 0.25m = 25cm
25cm = 10 inches ✓✓

1b.) 0.5m = 50 cm
50cm = 20 inches
= 1 foot 8 inches. ✓✓

2a.) 0.3m = 30cm
30cm = 12 inches = 1 foot ✓✓

2b.) 0.45m = 45cm
45cm = 17 inches
= 1 foot 6 inches ✓✓

3a.) 0.15m = 15cm
15cm = 6 inches ✓✓

3b.) 0.4m = 40cm
40cm = 16 inches
= 1 foot 4 inches ✓✓

4a.) 0.35m = 35cm
35cm = 14 inches = 1 foot 2 inches ✓✓

4b.) 0.7m = 70 cm
70cm = 28 inches
= 2 foot 4 inches ✓✓

5a.) 0.2m = 20 cm
20cm = 8 inches ✓✓

5b.) 0.55m = 55cm
55cm = 22 inches
= 1 foot 10 inches ✓✓

✓✓

6a.) 0.1 = 10cm
10cm = 4 inches ✓✓

6b.) 0.17.5m = 17.5cm
17.5cm = 7 inches ✓✓

7.)

7a.) 0.6m = 60cm
60cm = 24 inches = (2 foot) ✓✓

7b.) 0.225m = 22.5cm
22.5cm = 9 inches ✓✓

8a.) 0.65m = 65cm
65cm = 36 inches = 3 foot ✓✓

8b.) 0.275m = 27.5cm
27.5cm = 11 inches ✓✓
= 3 foot 1 1 inches

Selfs assessed

✓✓

Da iawn .

Super metric/imperial conversions.

11-3-15

L.O - To convert metric/imperial measures of capacity

1.) 1.5 l = 1500 ml
1.5 l ≈ 2 3/4 pints ✓✓

2.) 3 l = 3000 ml
3 l ≈ 5 1/4 pints ✓✓

3.) 2.5 l = 2500 ml
2.5 l ≈ 4 1/2 pints ✓✓

4.) 2 l = 2000 ml
2 l ≈ 3 1/2 pints ✓✓

5.) 5.5 l = 5500 ml
5.5 l ≈ 9 3/4 pints ✓✓

6.) 4 l = 4.000 ✓✓
4 l ≈ 7 pints

7.) 6 l = 6000 ml
6 l ≈ 10 1/2 pints ✓✓

8.) 4.5 l = 4500 ml ✓✓
4.5 l ≈ 8 pints

9.) 3.5 l = 3500 ml
3.5 l ≈ 6 1/4 pints ✓✓

10.) 1.25 l = 1250 ml ✓✓
1.25 l ≈ 2 pints

1.1) 2.25l = 2250ml //
2.25l ≈ 3 pints

// Super Metric / Imperial conversions

18-3-15

LO- To revise multiplication using the grid method

1.) 132 x 21 = 2772

| x | 100 | 30 | 2 |
|---|---|---|---|
| 20 | 2000 | 600 | 40 |
| 1 | 100 | 30 | 2 |

2640
+ 132
2772 ✓✓

2.) 242 x 21 = 5880

| x | 200 | 40 | 2 |
|---|---|---|---|
| 20 | 4000 | 800 | 40 |
| 1 | 200 | 800 | 40 |

4840
+ 1040
5880

3.) 314 x 21 = 6594

| x | 300 | 10 | 4 |
|---|---|---|---|
| 20 | 6000 | 200 | 80 |
| 1 | 300 | 10 | 4 |

6280
+ 314
6594 ✓✓

4.) 424 x 21 = 8904

| x | 400 | 20 | 4 |
|---|---|---|---|
| 20 | 8000 | 400 | 80 |
| 1 | 400 | 20 | 4 |

8480
+ 424
8904 ✓✓
1

5.) 522 x 31 = 16182

| x | 500 | 20 | 2 |
|---|---|---|---|
| 30 | 15000 | 600 | 60 |
| 1 | 500 | 20 | 2 |

15660
+ 522
16182 ✓✓
1

6.) 214 x 31 = 6634

| X | 200 | 10 | 4 |
|---|---|---|---|
| 30 | 6000 | 300 | 120 |
| 1 | 200 | 10 | 4 |

$$\begin{array}{r} 6420 \\ +\ \ 214 \\ \hline 6634 \end{array}$$ ✓✓

7.) 304 x 22 = 6688

| X | 300 | 4 |
|---|---|---|
| 20 | 6000 | 80 |
| 2 | 600 | 8 |

$$\begin{array}{r} 6080 \\ +\ \ 608 \\ \hline 6688 \end{array}$$ ✓✓

8.) 204 x 31 = 6324

| X | 200 | 4 |
|---|---|---|
| 30 | 6000 | 120 |
| 1 | 200 | 4 |

$$\begin{array}{r} 6120 \\ +\ \ 204 \\ \hline 6324 \end{array}$$ ✓✓

9.) 306 x 23 = 7038

| X | 300 | 6 |
|---|---|---|
| 20 | 6000 | 120 |
| 3 | 900 | 18 |

$$\begin{array}{r} 6120 \\ +\ \ 918 \\ \hline 7038 \\ 1 \end{array}$$ ✓✓

✓✓ Excellent multiplicati using the grid method.

10.) 405 x 22 = 8910

| X | 400 | 5 |
|---|---|---|
| 20 | 8000 | 100 |
| 2 | 800 | 10 |

$$\begin{array}{r} 8100 \\ +\ \ 810 \\ \hline 8910 \end{array}$$ ✓✓

19-3-15

LO:- To multiply using the compact method.

1) 316 × 32 = 10112 ✓✓

```
  316
x  32
 ----
  632
 9480
 ----
10112
 1 1
```

2) 420 × 23 = 9660 ✓✓

```
  420
x  23
 ----
 1260
 8400
 ----
 9660
```

3) 206 × 31 = 6386 ✓✓

```
  206
x  31
 ----
  206
 6180
 ----
 6386
```

4) 340 × 22 = 7480 ✓✓

```
  340
x  22
 ----
  680
 6800
 ----
 7480
```

✓✓

5.) 243 x 23 = 5589 √√

$$\begin{array}{r} 243 \\ \times\ 23 \\ \hline 729 \\ 4860 \\ \hline 5589 \end{array}$$

6.) 432 x 24 = 10368 √√

$$\begin{array}{r} 432 \\ \times\ 24 \\ \hline 1728 \\ 8640 \\ \hline 10368 \end{array}$$

7.) 340 x 32 = 10880 √√

$$\begin{array}{r} 340 \\ \times\ 32 \\ \hline 680 \\ 10200 \\ \hline 10880 \end{array}$$

8.) 504 x 24 = 12096 √√

$$\begin{array}{r} 504 \\ \times\ 24 \\ \hline 2016 \\ 10080 \\ \hline 12096 \end{array}$$

9.) 406 x 31 = 12586 √√

$$\begin{array}{r} 406 \\ \times\ 31 \\ \hline 406 \\ 12180 \\ \hline 12586 \end{array}$$

√√

10.1 540 x 24 = 12960 ✓✓

```
  540
x  24
 2160
10800
12960
```

✓✓ Dw i'n cytuno
Gwaith tadlus:

Super multiplication using
the compact method.

25 - 3 - 15

L.O. To divide using the chunking method.

1.) 4|663 165 3/4 √

- 400 (100x)
  263
- 200 (50x)
  63
- 40 (10x)
  23
- 20 (5x)
  3

2.) 5|772 154 2/5 √√

- 500 (100x)
  272
- 200 (40x)
  72
- 50 (10x)
  22
- 20 (4x)
  2

3.) 6|399 66 1/2 √√

- 300 (50x)
  99
- 90 (15x)
  9
- 6 (1x)
  3

4.) 5|728 145 3/5 √

- 500 (100x)
  228
- 200 (40x)
  28
- 25 (5x)
  3

5.) 6 | 998 166 1/3 √√
- 900 (150x)
98
- 90 (15x)
8
- 6 (1x)
2

6.) 21 | 107 5 2/21 √√
- 84 (4x)
23
- 21 (1x)
2

7.) 40 | 162 4 1/20 √√
- 120 (3x)
42
- 40 (1x)
2

8.) 31 | 124 4 √√
- 93 (3x)
31
- 31 (1x)
0

9.) 31 | 127 4 3/31 √√
- 93 (3x)
34
- 31 (1x)
3

Gwaith da
Excellent division using the chunking method.

10.) 41 | 129 3 6/41 √√
- 82 (2x)
47
- 41 (1x)
6

26-3-15

LO - To subtract using the compact method

1.) 524 - 395 = 129 √√

```
  4 11
  5 2 4     3 9 5
- 3 9 5   + 1 2 9
  1 2 9     5 2 4
            1 1
```

2.) 436 - 197 = 239 √√

```
  3 12 6
  4 3 6     2 3 9
- 1 9 7   + 1 9 7
  2 3 9     4 3 6
            1 1
```

3.) 753 - 595 = 158 √√

```
  6 14
  7 5 3     5 9 5
- 5 9 5   + 1 5 8
  1 5 8     7 5 3
            1 1
```

4.) 825 - 496 = 329 √√

```
  7 11
  8 2 5     4 9 6
- 4 9 6   + 3 2 9
  3 2 9     8 2 5
            1 1
```

5.) 973 - 597 = 376 √√

```
  8 16
  9 7 3     5 9 7
- 5 9 7   + 3 7 6
  3 7 6     9 7 3
            1 1
```

6.) 883 - 598 = 285 √√

```
 7 8 17 13      5 9 8
-5 9 8  + 2 8 5
 2 8 5    8 8 3
          1 1
```

7.) 968 - 797 = 171 √√

```
 8 9 16 8     7 9 7
-7 9 7  + 1 7 1
 1 7 1    9 6 8
          1
```

8.) 6331 - 3283 = 3048 √√

```
   6 8 12 1     3 2 8 3
- 3 2 8 3  + 3 0 4 8
   3 0 4 8    6 3 3 1
              1 1
```

9.) 5434 - 3977 = 1457 √√

```
 4 5 13 12 1 4     4 4 5 7
-3 9 7 7   + 3 9 7 7
 1 4 5 7     5 4 3 4
             1 1 1
```

10.) 4856 - 3886 = 970 √√

```
  3 4 17 8 1 5 6     3 8 8 6
- 3 8 8 6          +   9 7 0
  0 9 7 0           4 8 5 6
                    1 1
```

11.) 6385 - 4648 = 1737 √

```
  5 8 13 8 7 5     1 7 3 7
- 4 6 4 8        + 4 6 4 8
  1 7 3 7         6 3 8 5
                  1   1
```

12) 8749 - 2957 = 5792 ✓✓

```
 7 16
 8 7 14 9      5 7 9 2
-2 9 5 7  +   2 9 5 7
 5 7 9 2      8 7 4 9
              1 1
```

sdg assessed

Well done

Excellent subtraction using the compact method.

14-4-15

Lo-To carry out operations in the correct order.

1a.) $5 \times (3 + 8) = 55$ ✓✓

$8 + 3 = 11$

$11 \times 5 = 55$

1b.) $(5 \times 3) + 8 = 23$ ✓✓

$5 \times 3 = 15$

$15 + 8 = 23$

2a.) $40 \div (10 - 2) = 5$ ✓✓

$10 - 2 = 8$

$40 \div 8 = 5$

2b.) $(40 \div 10) - 2 = 2$ ✓✓

$40 \div 10 = 4$

$4 - 2 = 2$

3a.) $8 \times (23 - 2) = 168$ ✓✓

$23 - 2 = 21$

$21 \times 8 = 168$

3b.) $(8 \times 23) - 2 = 182$ ✓✓

$23 \times 8 = 184$

$184 - 2 = 182$

4a.) $9 + (17 \times 3) = 60$ ✓✓

$17 \times 3 = 51$

$51 + 9 = 60$

4b.) $(9 + 17) \times 3 = 78$ ✓✓

$9 + 17 = 26$

$26 \times 3 = 78$

5a.) $7 \times (6 - 3) = 21$ ✓✓

$6 - 3 = 3$

$7 \times 3 = 21$

5b.) (7 x 6) - 3 = 39 //
7 x 6 = 42
42 - 3 = 39

6a.) (12 x 6) ÷ 3 + 9 = 33 //
12 x 6 = 72
72 ÷ 3 = 24
24 + 9 = 33

6b.) 12 x (6 ÷ 3) + 9 = 33 //
6 ÷ 3 = 2
12 x 2 = 24
24 + 9 = 33

6c.) 12 x 6 ÷ (3 + 9) = 24 //
9 + 3 = 12
12 ÷ 6 = 2
12 x 2 = 24

7a.) (11 + 3) x 4 + 7 = 63 //
11 + 3 = 14
14 x 4 = 56
56 + 7 = 63

7b.) 11 + (3 x 4) + 7 = 30 //
3 x 4 = 12
12 + 11 = 23
23 + 7 = 30

7c.) 11 + 3 x (4 + 7) = 44 //
4 + 7 = 11
11 x 3 = 33
33 + 11 = 44

8a.) (8 x 9) - 3 x 5 = 357 //
8 x 9 = 72
72 x 5 = 360
360 - 3 = 357

8b.) $8 \times (9 - 3) \times 5 = 240$ //

$9 - 3 = 6$

$8 \times 6 = 48$

$48 \times 5 = 240$

8c.) $8 \times 9 - (3 \times 5) = 57$ //

$8 \times 9 - 15 =$

$72 - 15 = 57$

9a.) $(52 \div 4) + 9 \times 5 = 110$ //

$13 + 9 \times 5$

$22 \times 5 = 110$

Well done

Self assessed using a calculator.

You have used BIDMAS correctly to calculate.

15-4-15

Lo-To order decimals.

## Order 1 decimal place numbers

1.) 5.6 5.3 5.8 5.4 5.0 6.0
5.0 5.3 5.4 5.6 5.8 6.0 //

2.) 7.9 7.2 7.7 8.0 7.1 7.5
7.1 7.2 7.5 7.7 7.9 8.0 //

3.) 12.4 10.8 7.3 9.4 3.8 18.2
3.8 7.3 9.4 10.8 12.4 18.2 //

4.) 1.0 0.8 0.5 0.2 0.9 0.4
0.2 0.4 0.5 0.8 0.9 1.0 //

## Order 2 decimal numbers

5.) 6.16 6.19 6.14 6.11 6.13 6.18
6.11 6.13 6.14 6.16 6.18 6.19 //

6.) 4.41 4.45 4.39 4.57 4.54 4.50
4.39 4.41 4.45 4.50 4.54 4.57 //

7.) 3.89 3.83 3.93 3.46 3.42 3.51
3.42 3.46 3.51 3.83 3.89 3.93 //

8.) 8.76 8.84 8.34 8.01 8.51 8.15
8.01 8.15 8.34 8.51 8.76 8.84 //

## Ordering 1 and 2 decimal numbers

9.) 2.2 2.21 2.02 2.01 2.1
2.01 2.02 2.1 2.2 2.21 //

10.) 9.42 9.26 9.4 9.62 9.6 9.7
9.26 9.4 9.42 9.6 9.62 9.7 //

11.) 5.89 5.09 5.8 5.85 5.08
5.08 5.09 5.8 5.85 5.89 //

12.) 7.5 7.66 7.57 7.4 7.89 7.05
7.05 7.4 7.5 7.57 7.66 7.89 //

## Ordering 3 decimal places

13.) 7.463 7.953 7.750 7.063 7.874
7.087
7.063 7.087 7.463 7.750 7.874
7.953 //

14.) 3.346 3.246 5.356 8.356 5.235
3.621
3.246 3.346 3.621 5.235 5.356
8.356 //

15.) 6.387 6.376 6.394 6.382 6.398
6.356
6.356 6.376 6.382 6.387 6.394
6.398 //

16.) 4.742 4.740 7.694 7.877 7.376
7.326
4.740 4.742 7.326 7.376 7.694
7.877 //

## Ordering numbers up to 3 decimal places

17.) 8.6 8.66 8.576 8.5 8.57 8.55
8.5 8.55 8.57 8.576 8.6 8.66 //

18.) 6.95 7.09 6.65 6.9 7.9 6.99
6.65 6.9 6.95 6.99 7.09 7.9 //

19.) 7.632 7.6 7.567 7.765 7.675 7.7
7.567 7.6 7.632 7.7 7.675 7.765 ✓

20.) 5.555 5.565 5.050 5.055 5.505
5.5
5.050 5.055 5.5 5.505 5.555
5.565 //

Excellent ordering of the decimals. Well done
=) correction please.

20-4-15

Lo - To solve sums with holes

1.) $18 - a = 4^2$
$18 - a = 16$
$18 = 16 - a$
$18 - 16 = a$
$2 = a$ //

2.) $b + 24 = 64 \div 2$
$b + 24 = 32$
$24 = 32 + b$
$32 - 24 = b$
$8 = b$ //

3.) $19 - c = 100 - 82$
$19 - c = 18$
$19 = 18 + c$
$19 - 18 = c$
$1 = c$ //

4.) $30 \times 2 = 120 \div e$
$60 = 120 \div e$
$60 \times e = 120$
$120 \div 60 = e$
$2 = e$ //

5.) $150 \div x = 120 \div 4$
$150 \div x = 30$
$150 = 30 \times x$
$150 \div 30 = x$
$5 = x$ //

Arddercheg:

Excellent calculation of the missing letters.

21-4-15

L.O. Rounding to the nearest whole number or tenth.

1a) £9.13 → £9 ✓

1b) £9.13 → £9.10 ✓

2a) £17.12 → £17 ✓

2b) £17.12 → £17.10 ✓

3a) £12.39 → £12 ✓

3b) £12.39 → £12.40 ✓

4a) £7.49 → £7 ✓

4b) £7.49 → £7.50 ✓

5a) £19.10 → 19 ✓

5b) £19.10 → 19.10 ✓

6a) £15.25 → £15 ✓

6b) £15.25 → £15.30 ✓

7a) £11.32 → £11 ✓

7b) £11.32 → £11.30 ✓

8a) £19.72 → £20 ✓

8b) £19.72 → £19.70 ✓

9a) £14.91 → £15 ✓

9b) £14.91 → £14.90 ✓

10a) 2.24m → 2.2m ✓

1 ob.) 2.24m → 2m ✓✓

1 1a) 1.79m → 1.8m ✓✓

1 1b.) 1.79m → 2m ✓✓

1 2a.) 2.15m → 2.2m ✓✓

1 2b.) 2.15m → 2m ✓✓

1 3a.) 1.82m → 1.8m ✓✓

1 3b.) 1.82m → 2m ✓✓

1 4a.) 3.23m → 3.2 ✓✓

1 4b.) 3.23m → 3m ✓✓

1 5a.) 3.19m → 3.2m ✓✓

1 5b.) 3.19m → 3m ✓✓

1 6a.) 3.04m → 3.0m ✓✓

1 6b.) 3.04m → 3m ✓✓

1 7a.) 4.71m → 4.7m ✓✓

1 7b.) 4.71m → 5m ✓✓

1 8a.) 2.98m → 3.0m ✓✓

1 8b.) 2.98m → 3m ✓✓

1 9a.) 2.95m → 3.0m ✓✓

1 9b.) 2.95m → 3m ✓✓

✓✓ NOD Gyflawni!
Da iawn ti

// Good rounding to the nearest whole numbe and tenth.
Well done

28 - 4 - 15

L.O. To use and understand the relationship between fractions, decimals and percentages.

1.) $25\% = \frac{1}{4}$ ✓

2.) $0.3 = \frac{3}{10}$ ✓

3.) $\frac{12}{100} = 12\%$ ✓

4.) $\frac{73}{100} = 0.73$ ✓

5.) $\frac{2}{10} = 20\%$ ✓

6.) $54\% = \frac{54}{100}$ ✓

7.) $\frac{14}{100} = 0.14$ ✓

8.) $\frac{1}{5} = 20\%$ ✓

9.) $0.18 = \frac{18}{100}$ ✓

10.) $50\% = \frac{5}{10}$ ✓

11.) $75\% > 0.68$ ✓

12.) $0.71 > \frac{17}{100}$ ✓

13.) $0.36 = \frac{36}{100}$ ✓

14.) 85% = 0.85 ✓

15.) $\frac{27}{100}$ < 30% ✓

16.) 55% > $\frac{44}{100}$ ✓

17.) 31% > 0.13 ✓

18.) 21% = $\frac{21}{100}$ ✓

19.) 0.43 < $\frac{44}{100}$ ✓

20.) 8% < $\frac{80}{100}$ ✓

21.) 0.27, $\frac{35}{100}$, 50% ✓

22.) $\frac{70}{100}$, 71%, 0.75 ✓

23.) 0.33, 34%, $\frac{43}{100}$ ✓

24.) 8%, 0.18, $\frac{81}{100}$ ✓

25.) 0.9, 91%, $\frac{99}{100}$ ✓

26.) 2%, $\frac{2}{10}$, 0.21 ✓

27.) 0.2, 25%, $\frac{3}{10}$ ✓

✓✓ Nod Gyflawn.

✓✓ Well done Tegan you have a great understanding the relationship between decimals percentages and fractions ✓✓

Dw'in cytuno! Excellent understanding

30-4-15

L.O. To compare two sets of discrete data.

6A

| Shoe size | Frequency |
|---|---|
| $1\frac{1}{2}$ | 2 |
| 2 | 5 |
| $2\frac{1}{2}$ | 7 |
| 3 | 9 |
| $3\frac{1}{2}$ | 4 |
| 4 | 2 |
| $4\frac{1}{2}$ | 1 |

//

6B

| Shoe Size | Frequency |
|---|---|
| $1\frac{1}{2}$ | 1 |
| 2 | 2 |
| $2\frac{1}{2}$ | 3 |
| 3 | 6 |
| $3\frac{1}{2}$ | 8 |
| 4 | 5 |
| $4\frac{1}{2}$ | 3 |
| 5 | 2 |

//

The mode for class 6A is shoe size 3 and the mode for class 6B is shoe size $3\frac{1}{2}$. This suggest that class 6B have bigger feet than class 6A.

//

```
   3
+ 10
  17.5
  27
  14
   8
   4.5
 840
 30
```

840 ÷ 30 = 2.8 //

mean

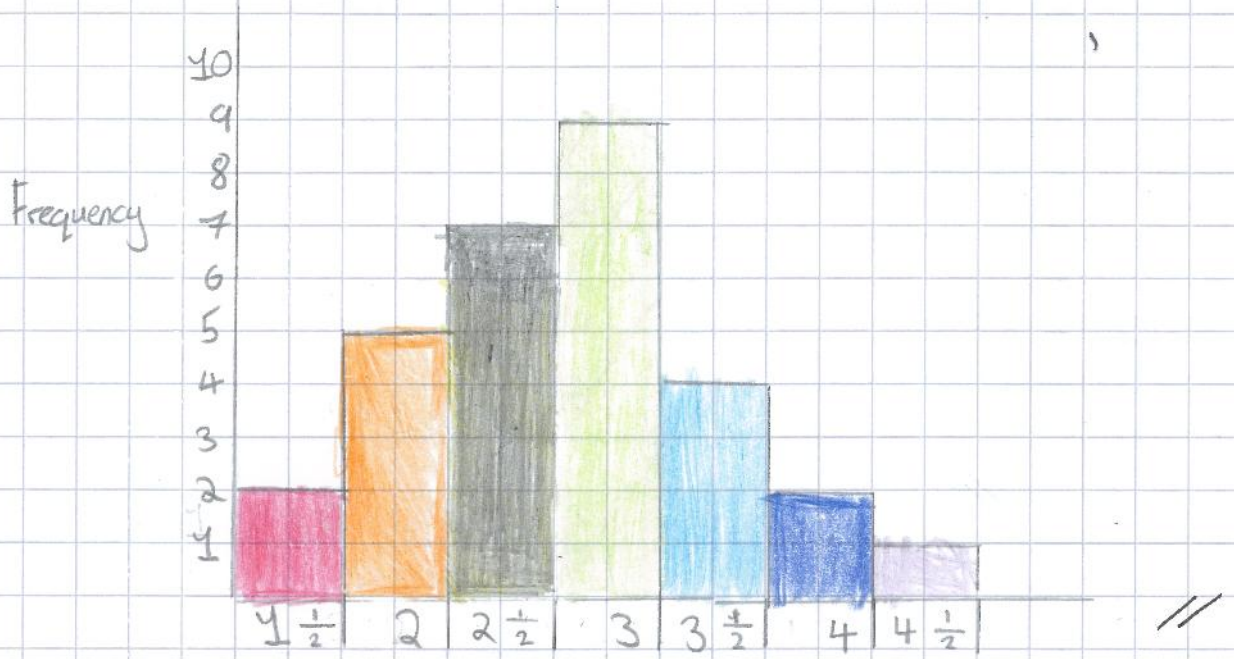
```
   1.5
+  4
   7.5
  18
  28
  20
  13.5
  10
 102.5
 30
```

102.5 ÷ 30 = 3.42 //

Well done .

Good comparison of the data sets.

## Class 6A



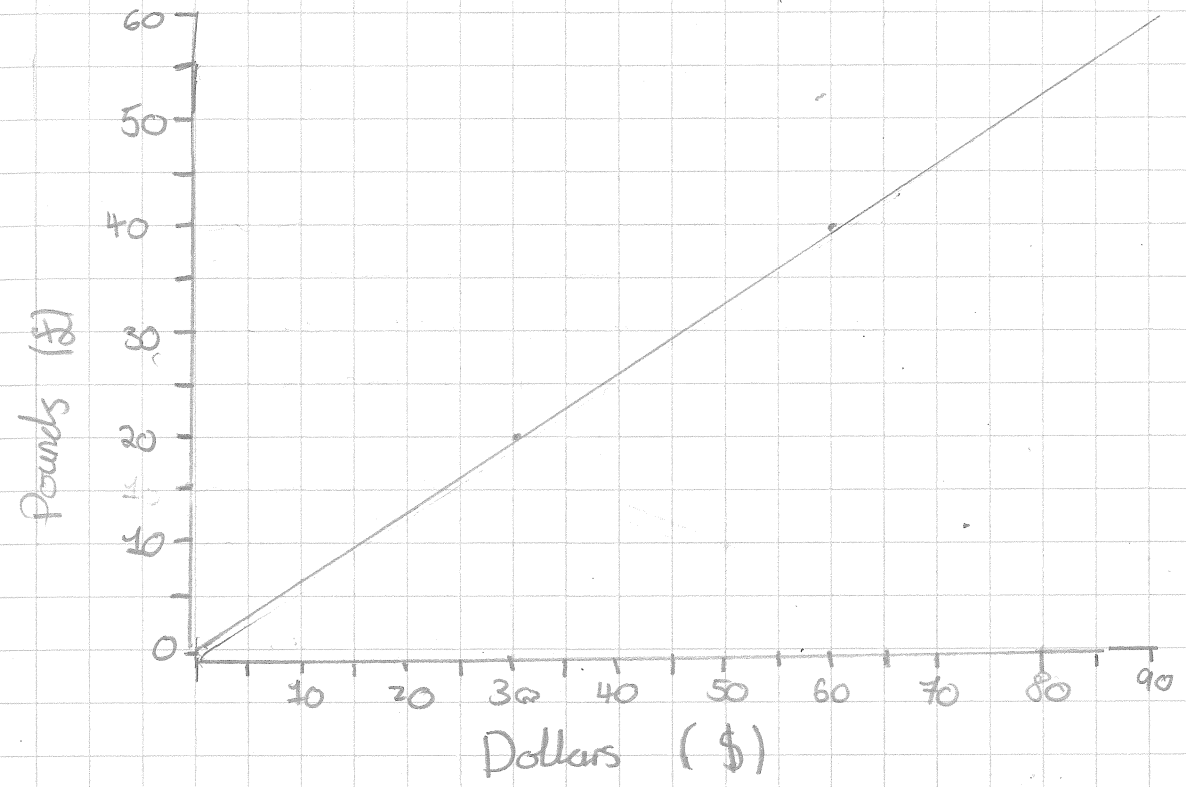

## Class 6B



5 - 5 - 15

L.O. To use and understand conversion graphs.

Conversion graph: Pounds and dollars.




1.) $45 //

2.) $60 //

3.) $23 //

4.) $54 //

5.) $15 //

6.) $38 //

7.) £20 //

8.) £10 //

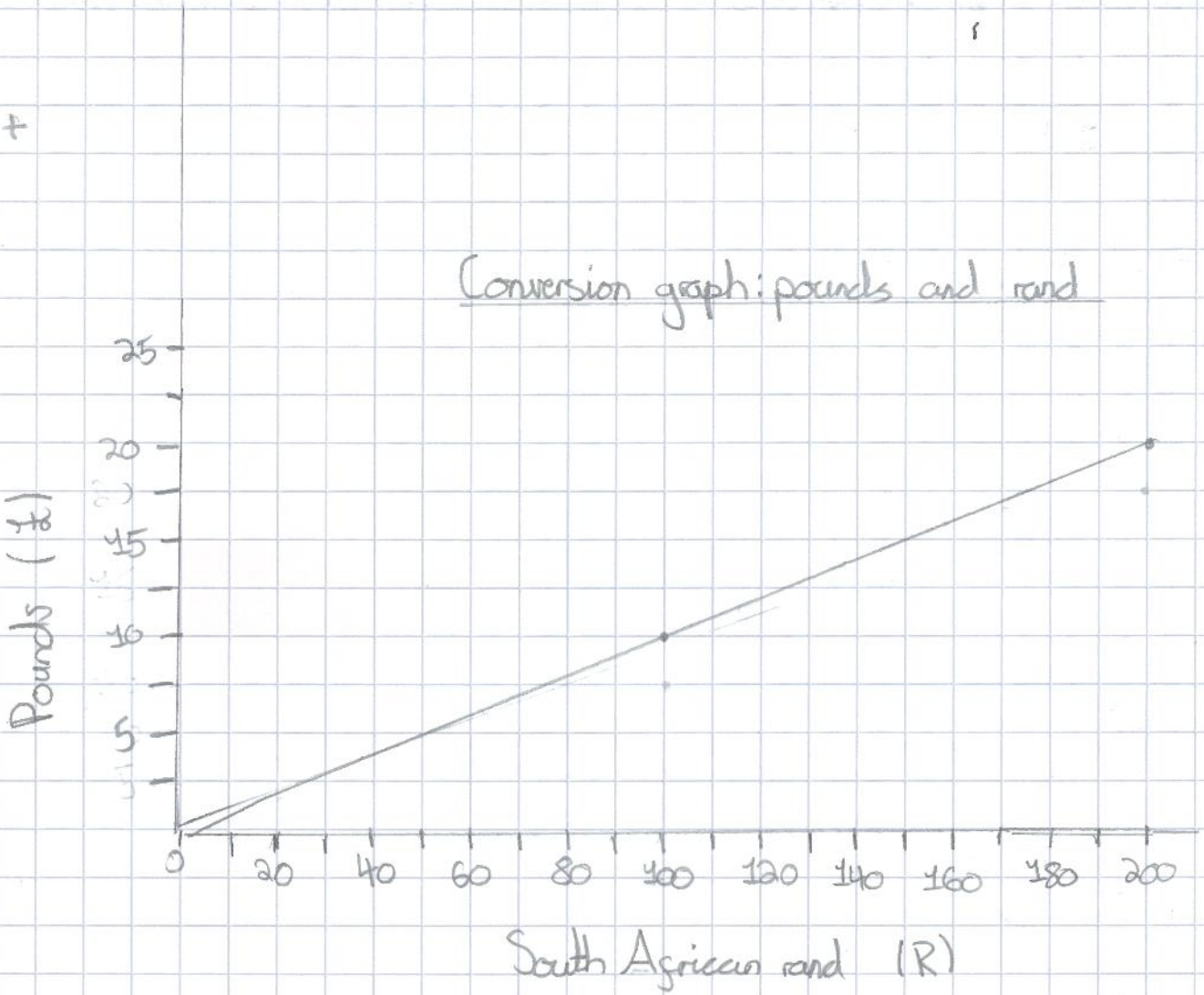
9.) £6 //

10.) £29 //

11.) £23 //

12.) £43 //

## Conversion graph: pounds and rand




13.) £2 ✓

14.) £5 ✓

15.) £8 ✓

16.) £18 ✓

17.) £12 ✓

18.) £17 ✓

Well done
✓ Excellent use of conversion graphs.

11.05.15

L.O. To recognise and describe number patterns and sequences.

1.) 7, 11, 15, 19, 23, 27, 31, 35
Add 4 each time. //

2.) 3, 5.5, 8, 10.5, 13, 15.5, 18, 20.5
Add 2.5 each time. //

3.) 3, 10, 17, 24, 31, 38, 45, 52
Add 7 each time. //

4.) $\frac{1}{2}$, 1, 1 $\frac{1}{2}$, 2, 2 $\frac{1}{2}$, 3, 3 $\frac{1}{2}$, 4
Add $\frac{1}{2}$ each time. //

5.) 9, 9.25, 9.5, 9.75, 10, 10.25, 10.5, 10.75
Add 0.25 each time. //

6.) 260, 271, 282, 293, 304, 315, 326, 337
Add 11 each time. //

7.) 11.6, 12.2, 12.8, 13.4, 14, 14.6, 15.2, 15.8
Add 0.6 each time. //

8.) 38.3, 38.6, 38.9, 39.2, 39.5, 39.8, 40.1, 40.4
Add 0.3 each time. //

Well done.
Good recognition of the patterns within the number sequences.

12-5-15

LO-To identify the reflective and rotational symmetry of triangles and quadrilaterals.

| Name | Number of axes of symmetry | Order of rotation |
|---|---|---|
| Irregular-shaped quadrilateral | 0 | 1 // |
| Ordinary trapezium | 0 | 1 // |
| Isosceles trapezium | 1 | 1 // |
| Kite | 1 | 1 // |
| Parallelogram | 0 | 2 // |
| Rhombus | 2 | 2 // |
| Rectangle | 2 | 2 // |
| Square | 4 | 4 // |

| Name | Number of axes of symmetry | Order of rotation |
|---|---|---|
| Scalene triangle | 0 | 1 // |
| Isosceles triangle | 1 | 1 // |
| Equilateral triangle | 3 | 3 // |

Da lawn

Super symmetry work.

FG

13-5-15

L.O. To interpret pie charts.

1.) 4 //

2.) 4 //

3.) 2 //

4.) 2 //

5.) 2 //

6.) 3 //

7.) 4 //

8.) Sci-fi //

9.) Soaps //

10.) Horror //

11.) Sports and adventure //

12.) $\frac{4}{8} = \frac{1}{2}$ //

13.) $\frac{4}{8}$ //

14.) $\frac{2}{8} = \frac{1}{4}$ //

15.) $\frac{1}{8}$ //

16.) $\frac{2}{8} = \frac{1}{4}$ //

17.) $\frac{3}{8}$ //

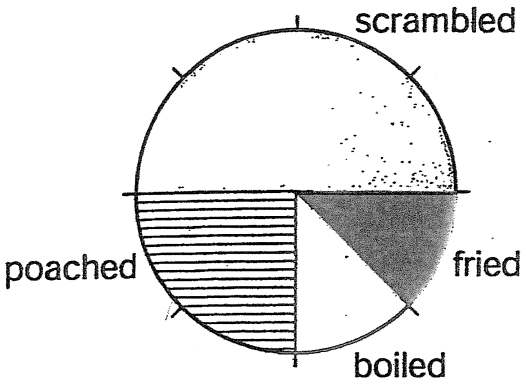
18.) $\frac{2}{8} = \frac{1}{4}$ //

Well done

Excellent interpretation of the pie charts.

16 pupils said how they liked their eggs cooked.

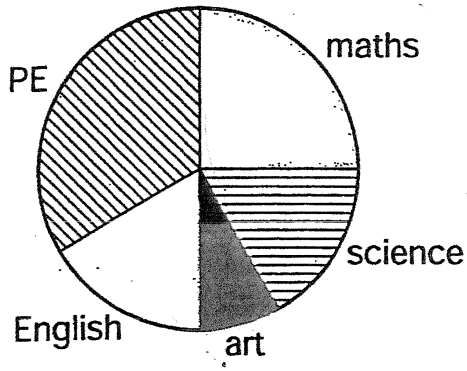
How many preferred poached eggs? 4 //
What fraction preferred boiled eggs? $\frac{1}{8}$ //




---

48 pupils chose to attend a Saturday class.

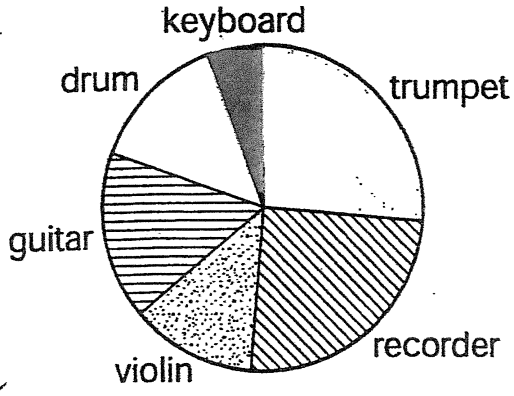
What fraction of them chose PE? $\frac{1}{3}$ //
How many of them chose maths? 12 //
What fraction of them did not choose art or English? $\frac{3}{4}$ //




---

80 pupils chose a musical instrument.

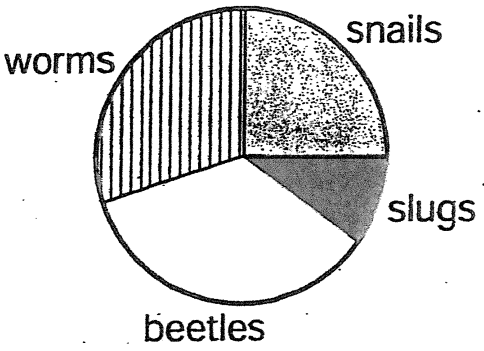
Estimate what fraction of them chose a drum. $\frac{1}{8}$ //
Estimate the number of them who chose a violin. 10 //



Tony and Gemma looked for snails, worms, slugs and beetles in their gardens.

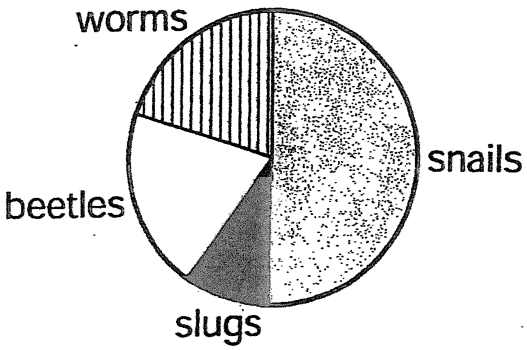
They each made a pie chart of what they found.

**Tony's pie chart**




**Total 80**

**Gemma's pie chart**




**Total 36**

Estimate the number of worms that Tony found.

.....25..... worms //

Who found more snails? Circle: (Tony) / Gemma //

Explain how you know.

Tony had a quarter of 80 which is 20 and Gemma has a half of 36 which is 18. So Tony has more //

19-5-15

L.O. To calculate the mean, median and mode.

| Numbers | Frequency | |
|---|---|---|
| 1 | III | = 3 |
| 2 | IIII | = 8 |
| 3 | III | = 9 |
| 4 | IIII I | = 20 |
| 5 | III | = 15 |
| 6 | II | = 12 |

Mean = $3\frac{7}{20}$ ✓✓

$67 \div 20 = 3\frac{7}{20}$

Median = 3.5 ✓✓

2, 3, 4, 5

3.5

Mode = 4 ✓✓

| Numbers | Frequency | |
|---|---|---|
| 1 | IIII | = 4 |
| 2 | III | = 6 |
| 3 | III | = 9 |
| 4 | IIII I | = 16 |
| 5 | IIII | = 25 |
| 6 | II | = 12 |

Mean = $3\frac{9}{21}$ =

$72 \div 21 = 3\frac{9}{21}$ ✓✓

Median = 3.5 ✓✓

2, 3, 4, 5

3.5

Mode = 5 ✓✓

| Numbers | Frequency | |
|---|---|---|
| 1 | 11 | = 2 |
| 2 | 1 | = 2 |
| 3 | 1111 | = 12 |
| 4 | 111 | = 12 |
| 5 | 11 | = 10 |
| 6 | 111 | = 18 |

Mean = 3 $\frac{11}{15}$

56 ÷ 15 = 3 $\frac{11}{15}$

Median = 2.5

1, 2, 3, 4

2.5

Mode = 3

✓✓ Gwauth da

Great calculation of mean, median and mode.

# 20-5-15

L.O. To solve word problems.

1.) What is the total of £63.50, £48.70 and £11.58?

£63.50
48.70
11.58
£123.78 //
 1 1

2.) What is the total cost of a tape recorder costing £47.50, two speakers costing £4.20 each and a CD costing £8.90?

£4.20 × 2 = £8.40

47.50
8.90
8.40
£64.80 //
2 1

3.) If ten atlases cost £45.60, how much does one cost?

H T U. t h
£45.56
£4.56 //

4.) Simon bought five dictionaries. Altogether they cost £12.50. What was the cost of one dictionary?

5 | 12.50
−10.00 (×2)
£2.50 //

5.) A crate of lemonade bottles is five bottles wide and seven bottles long. How many bottles does it hold? If one bottle of lemonade costs 46p, how much does a crate of lemonade cost?

7 × 5 = 35

| × | 40 | 6 | |
|---|---|---|---|
| 30 | 1200 | 180 | = 1380 |
| 5 | 200 | 30 | = 230 |
| | | | = 16.10 |

£16.10 //

6.) A family of two parents and three children went to the cinema. Adult's tickets cost £3.60 each and children's tickets cost £1.80 each. How much did it cost the family to go to the cinema?

£3.60 × 2 = £7.20  £1.80 × 3 = £5.40

$$\begin{array}{r} 7.20 \\ +\ 5.40 \\ \hline £12.60 \end{array}$$ //

Well done.
Good use of your written methods to solve the word problems.

26/2/15

# Transformation problems

On the following page a number of shapes are arranged on a grid.

Answer these questions, marking your answers on the grid where appropriate.

1 Draw the mirror line which would reflect shape A onto shape B.

2 Name any other pairs of shapes which are reflections of each other. Draw the corresponding mirror lines. AE EF //

3 Name a shape which is a translation of A. F // FG

4 Name two shapes which are translations of B. DG //

5 Shape B can be rotated to position C. Mark the centre of rotation and state the angle of the rotation. 90° clockwise //

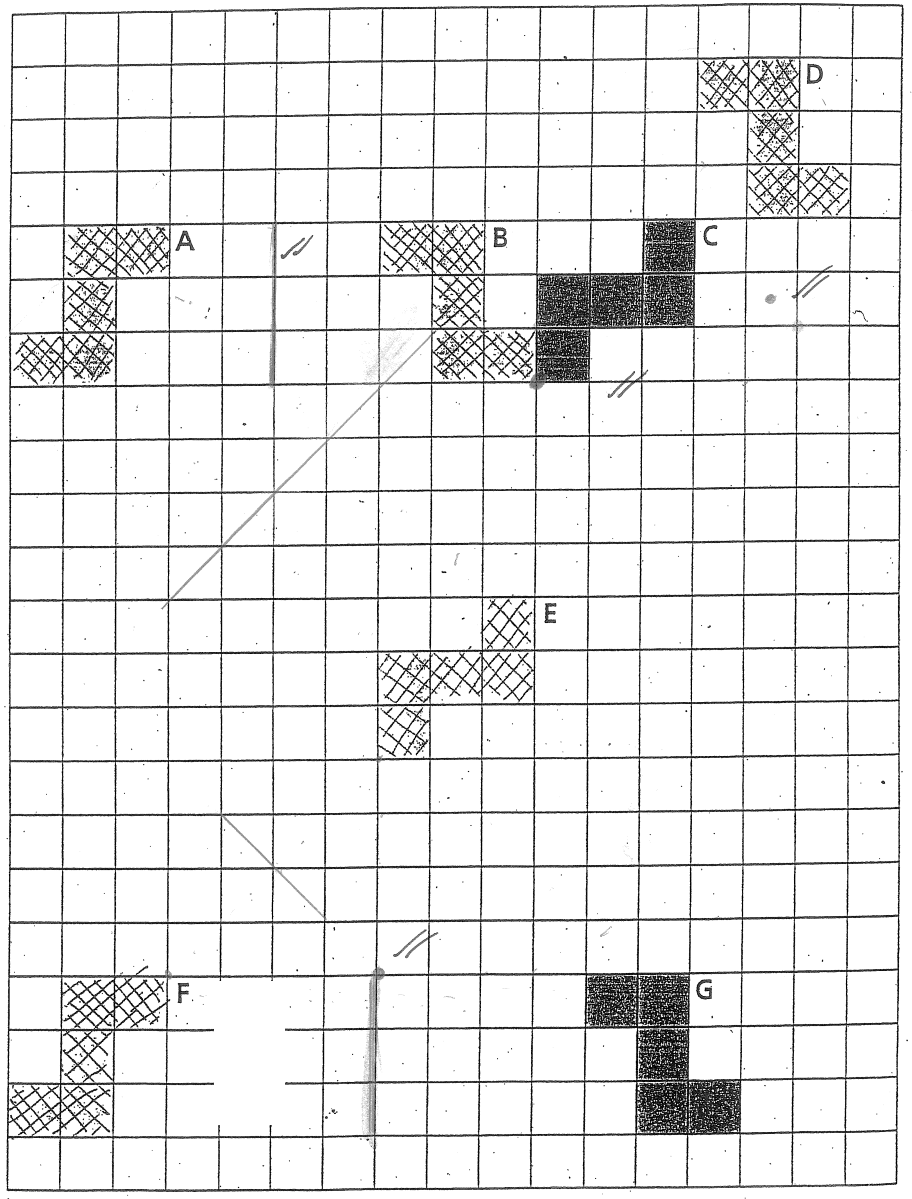
6 Find the centre of rotation and the angle of rotation which transforms E into G. 90° clockwise //

7 Find the centre of rotation and the angle of rotation which transforms D into C.

8 Describe the transformation from A to F in two different ways.



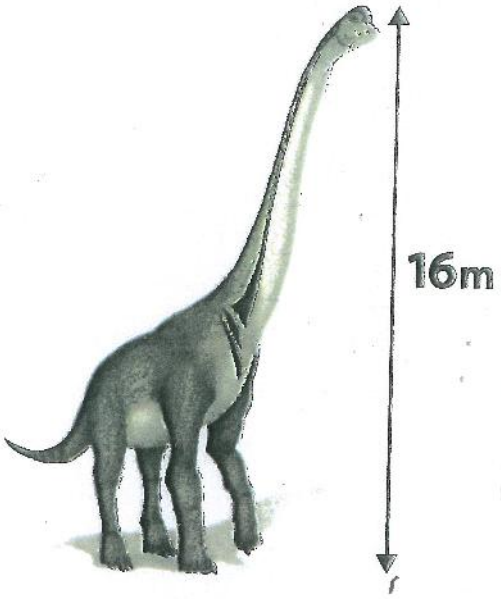




4-6-15

L.O. To identify the appropriate steps to complete the task.

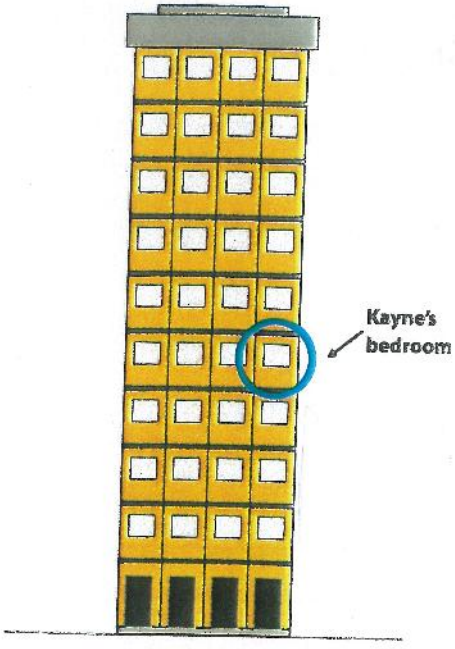
1 The Ultrasaurus was 16m high.

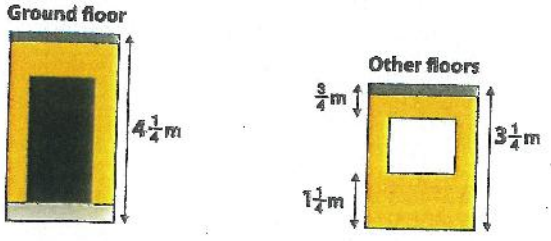



Use the information on the next page.

Could the Ultrasaurus see into Kayne's bedroom?

Show calculations to explain how you know.




3

The ultrasaurus is 16m high //

The ground floor is $4\frac{1}{4}$m high. //

We already know that Kayne's bedroom is on the 4th floor but we need to do $3\frac{1}{4} \times 3$ as we can't add Kayne's bedroom yet. //

$3.25 \times 3 = 9.75$m

I changed it to a decimal so I could understand it more.

Then, add the ground floor measurements.

$9.75 + 4.25 = 14$m //

For Kayne's bedroom, you only need to add on the measurements for the bottom of Kayne's window.

$14 + 1.25 = 15.25$m or $15\frac{1}{4}$m //

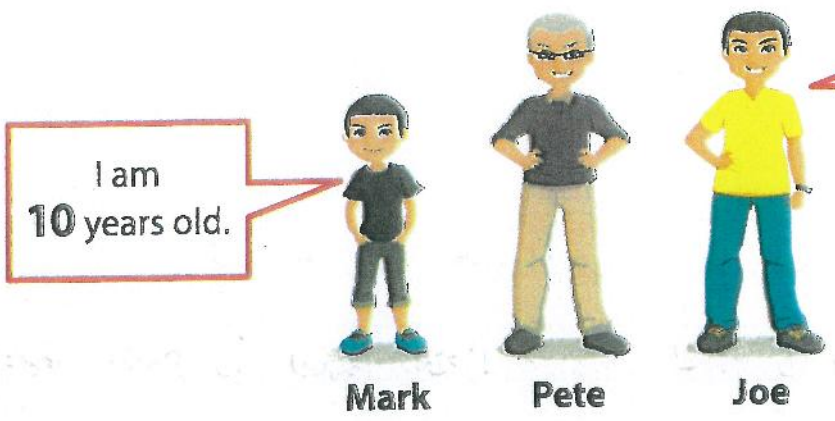
To the bottom of kayne's bedroom, the height is $15\frac{1}{4}$m tall. The ultrasaurus is 16m tall. The ultrasaurus will be tall enough to see into the bottom of Kayne's window. //

Arddorchog

Fantastic reasoning.

2 Work out how many **even numbers** there are between **1** and **81**

3




The **total** of their ages is **100**

How old is **Pete**?

years old

2, 4, 6, 8 and 10

Every 5 even numbers are in 10

There are 8 10's in 81

$8 \times 5 = 40$

There are 40 even numbers inbetween 1 and 81

//

Mark is 10 years old.

All of their ages add up to 100.

$100 - 10 = 90$ So Pete and Joe's ages must add up to 90. //

If Pete was 60, half of 60 is 30 so Joe would be 30. //

$30 + 60 + 10 = 100$
Joe Pete Mark //

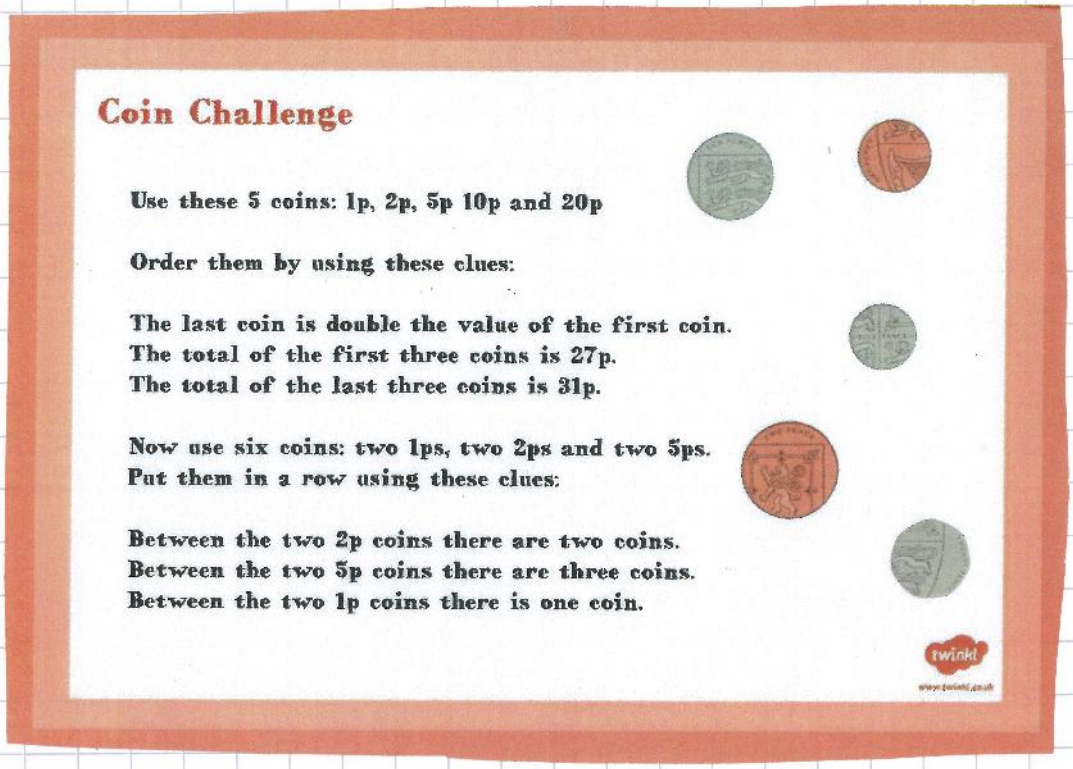
Therefore, Pete is 60 years old.

//

Super explanations . Well done.

8-6-15

L.O. To explain methods used when solving reasoning problems.




1p 2p 5p 10p 20p

Last coin double value of 1st coin

5p 10p

10p 20p

total 1st 3 coins is 27p

5p 2p 20p

total last 3 coins is 31p

20p 1p 10p

Final = 5p 2p 20p 1p 10p //

$1_p$ $1_p$ $2_p$ $2_p$ $5_p$ $5_p$

$2_p - - 2_p$

$5_p - - - 5_p$

$1_p - 1_p$

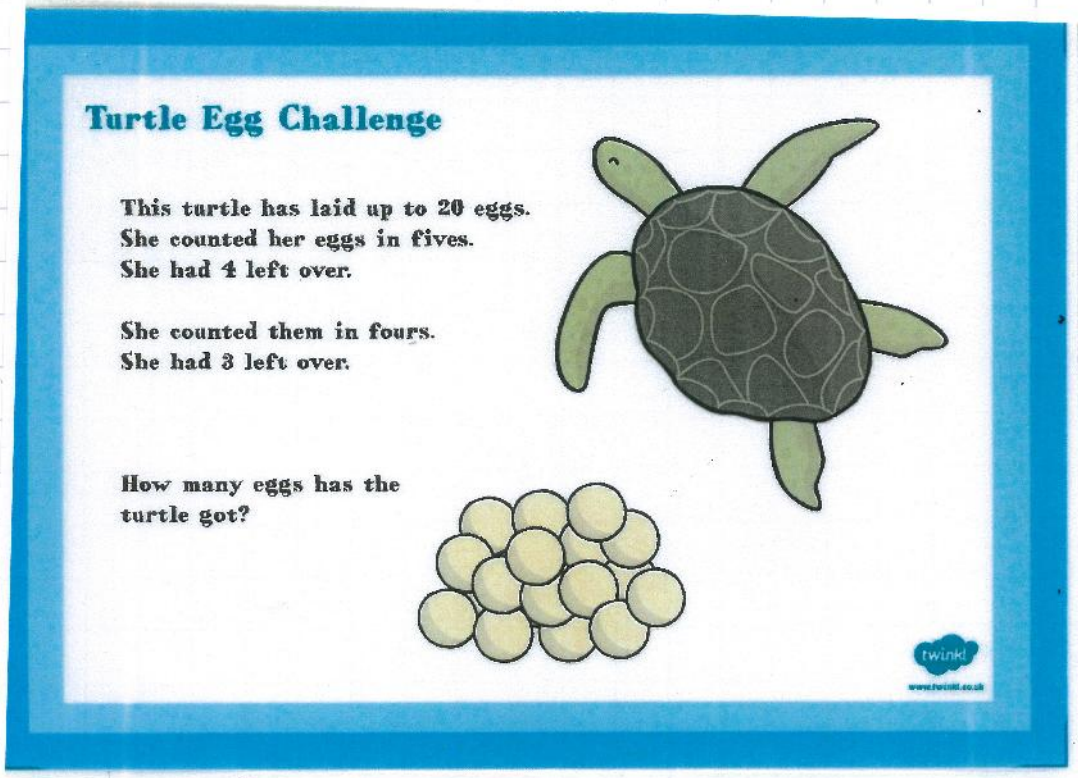
$2_p$ $5_p$ $1_p$ $2_p$ $1_p$ $5_p$ //

Excellent reasoning .

Well done.

10-6-15

L.O. To explain methods when solving reasoning proble




20 eggs

How many 5 goes in 20?

5 10 15 +4=19

How many 4 goes in 20?

4 8 12 16+3=19

The turtle has got 19 eggs altogether.

## Stamp Price Challenge

**Rachel spent 2 pounds on stamps that cost 10p and 20p.**





**She bought three times as many 10p stamps as 20p stamps.**

**How many of each stamp did she buy?**

$4 \times 20p = 80p$

$3 \times 4 = 12$

$12 \times 10p = £1.20$

$$\begin{array}{r} £1.20 \\ +\ £0.80 \\ \hline £2.00 \\ \hline \end{array}$$

1

There was 4 20ps and 12 10ps.

⇒ Did you find this by trial and error or a different method?

12-6-15

## What Age Challenge



1. My mum is 35.
9 years ago she was the age I shall be in 13 years' time.
How old am I now?



2. Last year my age was a square number.
Next year it will be a cube number.
How old am I?



3. My age next year will be a multiple of 8.
My age now is a multiple of 7.
How old am I?

1) 35 - 9 = 26
26 - 13 = 13

She is 13 years old now. //

2) 9 x 3 = 27 years
5 x 5 = 25 years
25 years, 26 years, 27 years

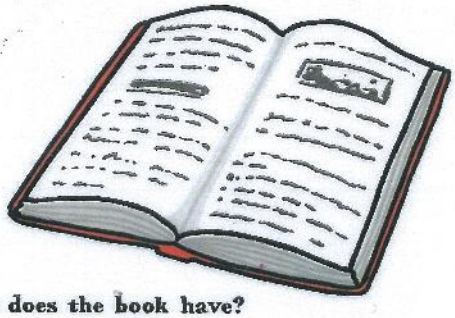
She is 26 years old. //

3) He is 47 years old because next year his age will be a multiple of 8 so 64 then take a year off 64 so 63 and 63 is a multiple of 7. //

15-6-15

## Book Page Challenge

**The pages of this book are numbered starting with the number 1. The page numbers have a total of 595.**



**How many pages does the book have?**
**How many of the page numbers have a 5 in them?**

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,
18,19,20,21,22,23,24,25,26,27,28,29,30,
31,32,33,34

the book has 34 pages //

5,15,25

There are 3 numbers that have a 5 in them. //

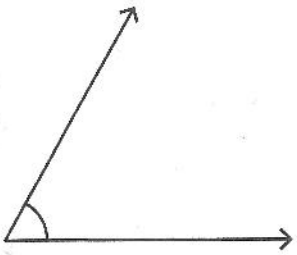
Well done
You are demonstrating some very logical thinking.

16-6-15

L.O. Estimating and measuring angles.

Estimate the measure of each angle. Also find the exact measure using protractor.

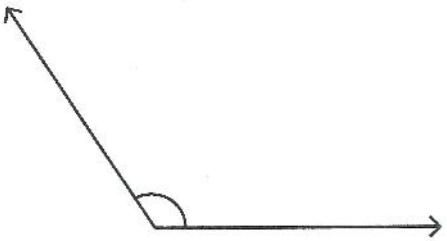
1)



Estimation : 70°

Exact measure : 60° //

2)



Estimation : 125°

Exact measure : 125° //

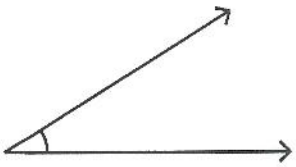
3)



Estimation : 170°

Exact measure : 165° //

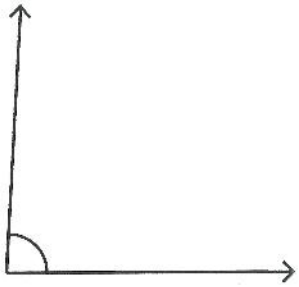
4)



Estimation : 45°

Exact measure : 32° //

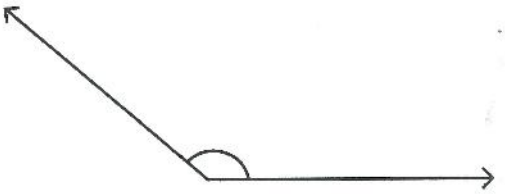
5)



Estimation : 89°

Exact measure : 87° //

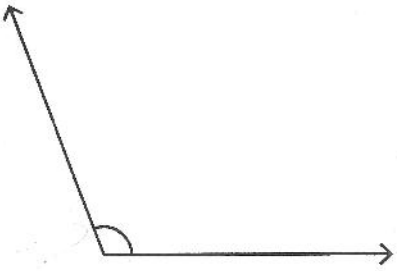
6)



Estimation : 135°

Exact measure : 140° //

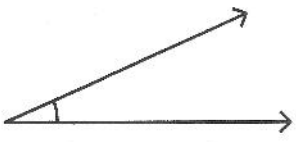
7)



Estimation : 110°

Exact measure : 110° //

8)

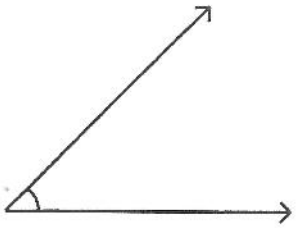


Estimation : 25°

Exact measure : 26° //

Choose the best estimation for the measure of each angle.

1)

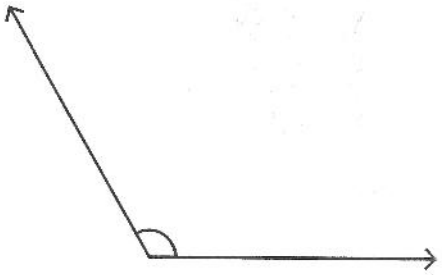


a) $30^0$ approx

b) $45^0$ approx ✓ //

c) $60^0$ approx

2)

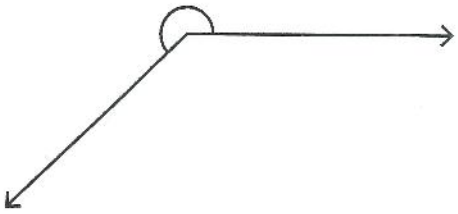


a) $100^0$ approx

b) $110^0$ approx ✓ ✗

c) $120^0$ approx

3)

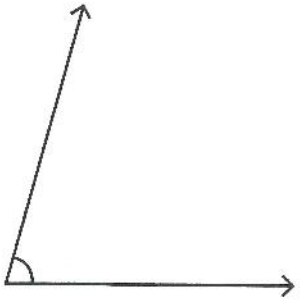


a) $155^0$ approx

b) $225^0$ approx ✓ //

c) $270^0$ approx

4)

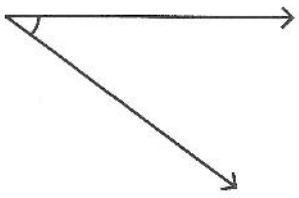


a) $75^0$ approx

b) $85^0$ approx ✓ ✗

c) $90^0$ approx

5)

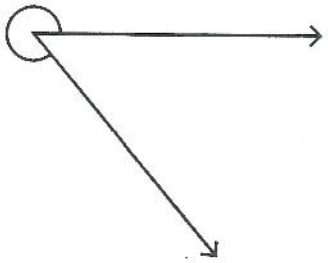


a) $20^0$ approx

b) $35^0$ approx ✓ //

c) $50^0$ approx

6)



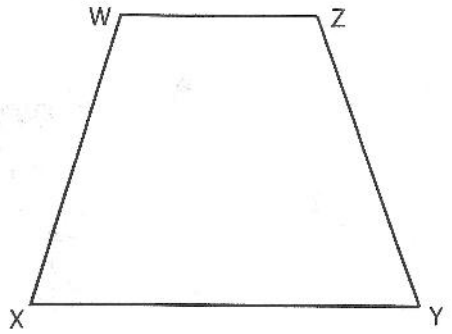
a) $50^0$ approx

b) $280^0$ approx

c) $310^0$ approx ✓ //

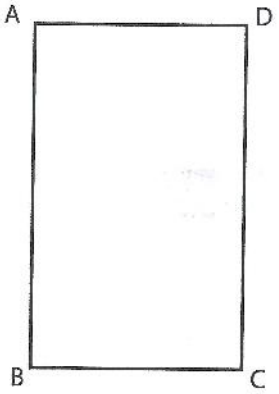
Measure each angle using protractor.

1)



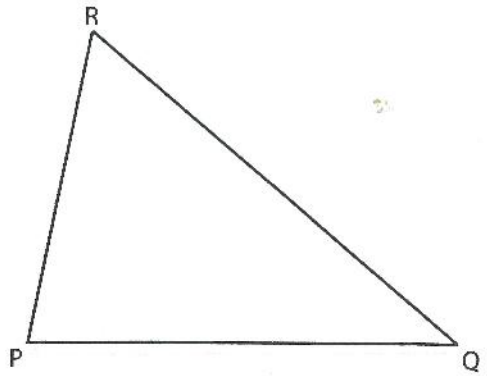

∠WZY = 110° //

2)



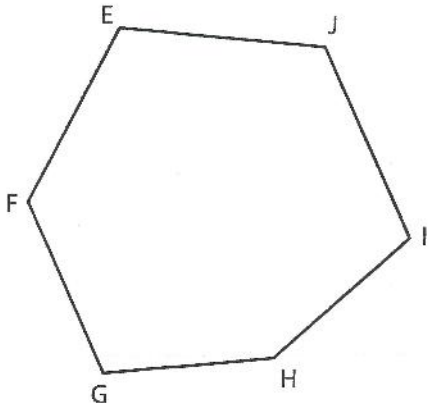

∠BCD = 90° //

3)



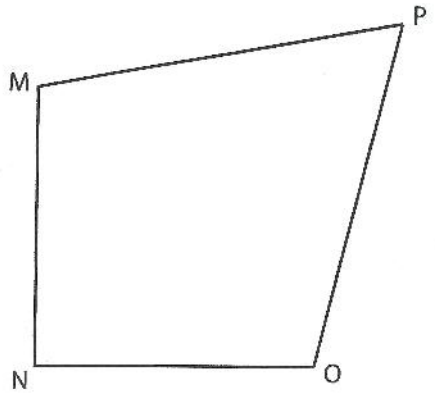

∠PQR = 40° //

4)



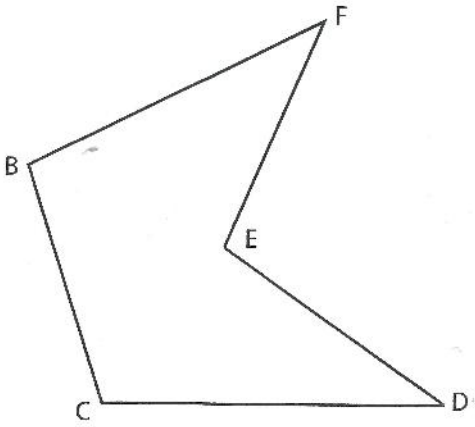

∠EFG = 128° //

5)




∠NOP = 104° //

6)




∠CDE = 35°

Well done . Good estimation and measurement of the angles.

=> Corrections please

17 - 6 - 15

L.O. To use one function machine.

# Finding outputs

Resource sheet 1a




| Input numbers | Function machine | Output numbers |
|---|---|---|
| 3<br>7<br>56<br>168 | +29 | 32 ✓<br>36 ✓<br>85 ✓<br>197 ✓ |
| 7<br>19<br>63<br>109 | −6 | 1 ✓<br>13 ✓<br>57 ✓<br>103 ✓ |
| 40<br>59<br>100<br>276 | x 3 | 120 ✓<br>177 ✓<br>300 ✓<br>828 ✓ |
| 7<br>23<br>99<br>503 | x 9 | 63 ✓<br>207 ✓<br>891 ✓<br>4527 ✓ |
| 30<br>51<br>150<br>999 | ÷ 3 | 10 ✓<br>17 ✓<br>50 ✓<br>333 ✓ |

**Challenge**

Now invent some function machines and input numbers for your partner to work out the output numbers. See how tough you can make it.

✓✓ Well done You understand the use of a function machine.

18-6-15

L.O. To combine function machines.

1.) 5 | x 4 | - 4 | = 16 //

2.) 5 | + 3 | - 4 | x 4 | = 16 //

3.) 5 | x 2 | x 4 | ÷ 2 | - 4 | = 16 //

4.) 5 | - 1 | + 6 | x 4 | ÷ 2 | - 4 | = 16 //

5.) 5 | + 6 | - 4 | - 1 | ÷ 3 | x 2 | x 4 | = 16 //

6.) 5 | + 6 | - 1 | x 4 | ÷ 3 | + 3 | x 2 | ÷ 2 | = 16 x

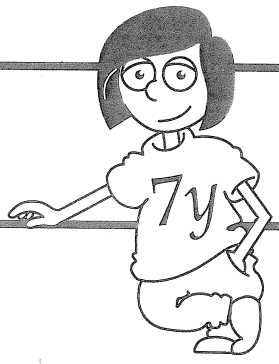
7.) 5 | + 6 | - 1 | - 4 | ÷ 2 | + 3 | ÷ 3 | x 4 | x 2 | = 16 //

// Excellent work combining function machines.

22-6-15

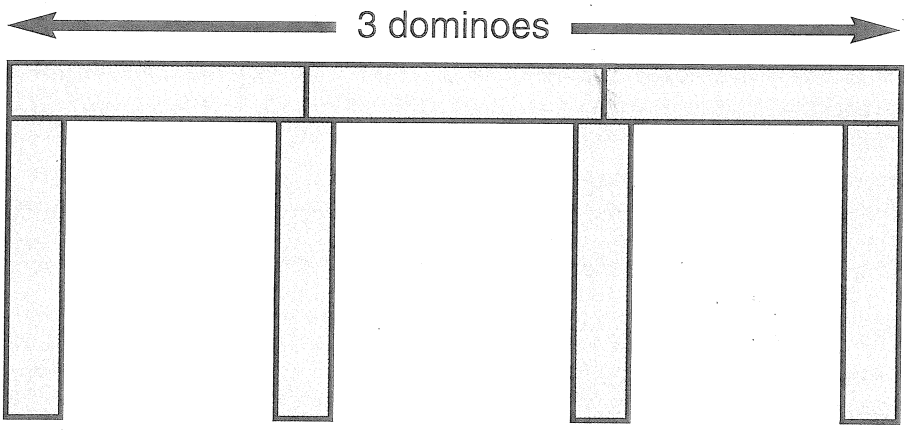
L.O. To use functions to solve problems.

# Domino bridges




Resource sheet 3a

Bridges can be made out of dominoes. Here is an example of a bridge three dominoes long:




The **length** of this bridge is three dominoes.

You need **seven** dominoes to build the bridge.

**Task**

Can you work out how many dominoes it would take to build a bridge that is 145 dominoes long?

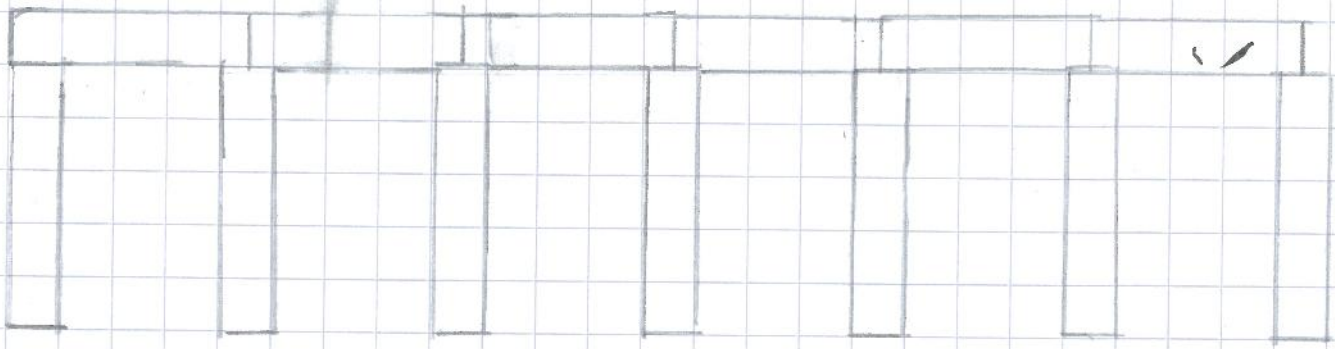
**Challenge**

Can you find a way of working out the number of dominoes needed to make a bridge of any length of dominoes?

**Further Tasks**

Try building your own domino bridge, using a different number of dominoes as supporting columns. How many dominoes will you need to make you own bridge 145 dominoes long?

Explain how you worked out the number of dominoes you would need.



| Length of bridge | Number of dominoes. | |
|---|---|---|
| 1 | 3 | // |
| 2 | 5 | // |
| 3 | 7 | // |
| 4 | 9 | // |
| 5 | 11 | // |
| 6 | 13 | // |

To figure out the number of dominoes for any brid
you need to multiply the length of bridge by two, then
add one to find out your answer. //

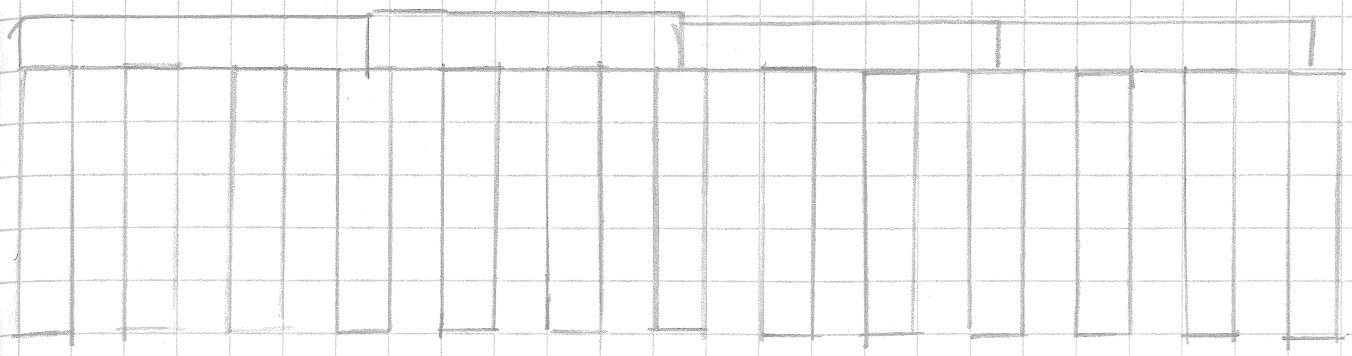
L = the length of the bridge N = the number of domino

Double L + 1 = N

2L + 1 = N

So, for a bridge that is 145 dominoes long,

(145 × 2) + 1 = 291 //



| Length of bridge | Number of dominoes | |
|---|---|---|
| 1 | 5 | // |
| 2 | 9 | // |
| 3 | 13 | // |
| 4 | 17 | // |

$D = 4L + 1$ //

Bordigading .

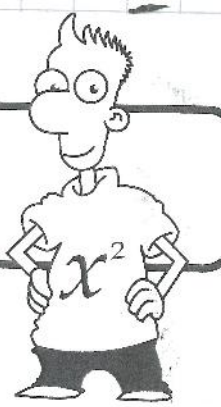
Great use of algebraic expressions.

23-6-15

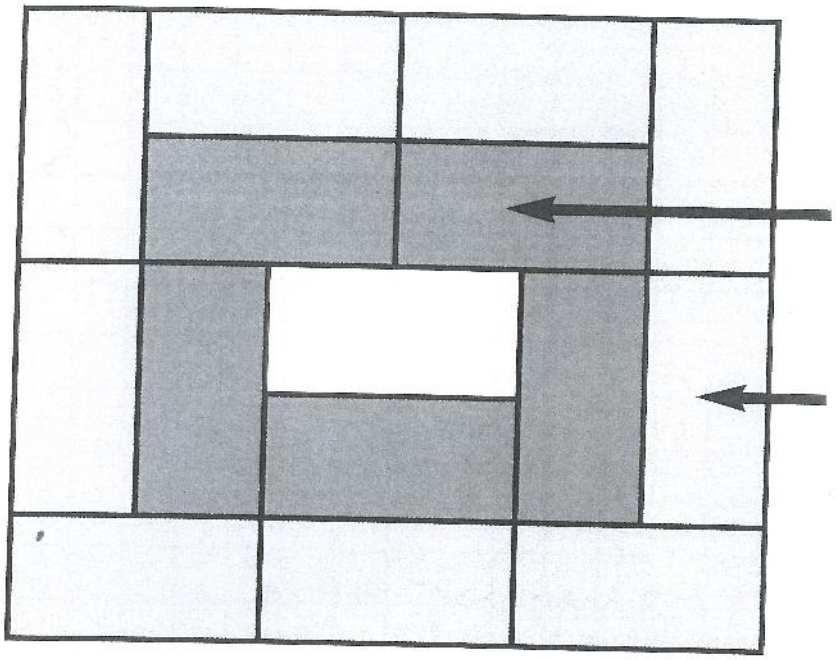
L.O. To use functions to solve Problems.

# Surrounding the rectangle

Resource sheet 4a




Start with two linking cubes and join them together to make a solid rectangle. Surround it with a layer of rectangles. Surround the new shape with a second layer of rectangles and continue the process.



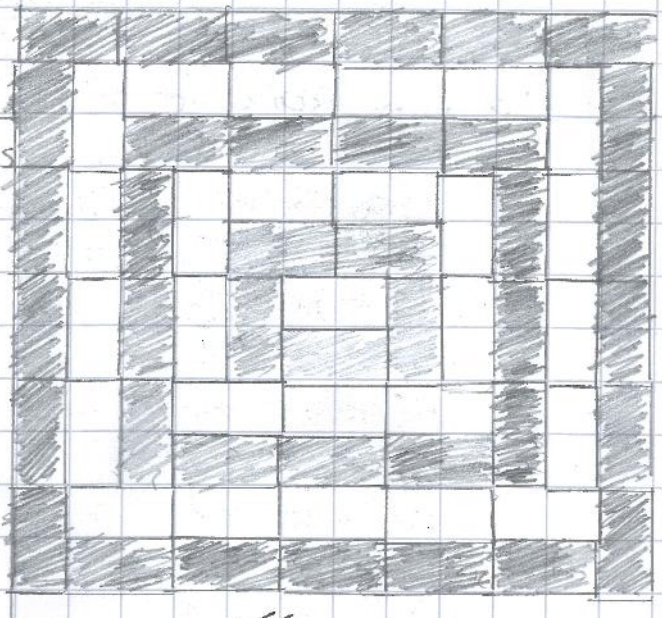

How many rectangles will it take to make the twenty-fourth layer?

**Task**

Find a two-stage function machine to help you work out the number of rectangles in any layer.

**Challenge**

Try surrounding the rectangles by starting with two rectangles in the centre. Investigate what happens to the number of rectangles in each surround. How many rectangles are there in the twenty-fourth layer?



| Number of Layers | Number of rectangles |
|---|---|
| 1 | 5 |
| 2 | 9 |
| 3 | 13 |
| 4 | 17 |
| 5 | 21 // |

//

L = Layers  R = rectangles

(L × 4) + 1 = R

4L + 1 = R //

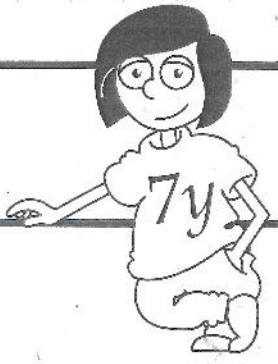
(24 × 4) + 1 = 97 //

To figure out how many rectangles it takes to make the 24th layer, you have to times the 24th layer by 4, then add 1. //

25~6~15

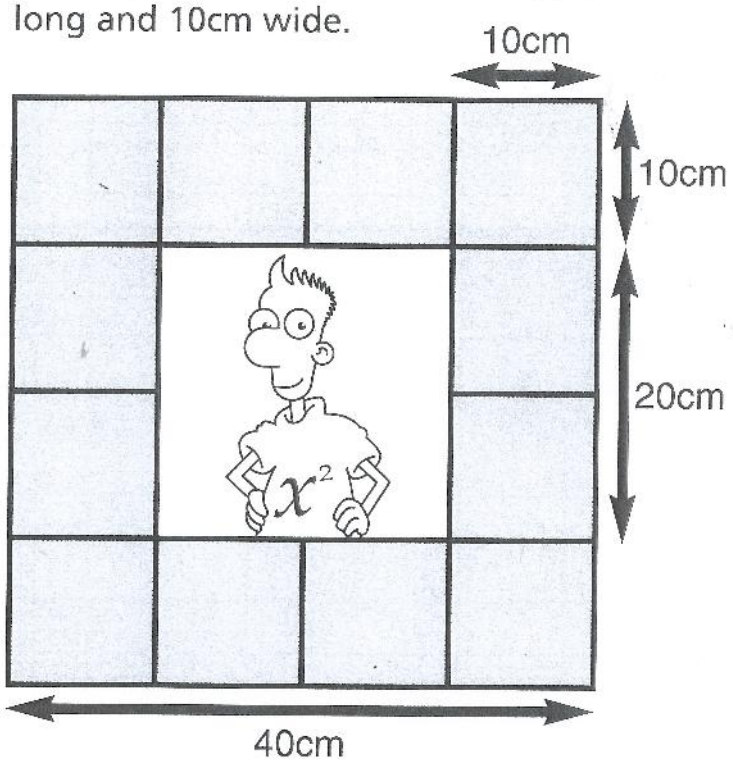
L.O. To use functions to solve problems

# Picture frames




Resource sheet 4b

Karen makes square picture frames from square sections of wood 10cm long and 10cm wide.




**Task**

Using linking cubes to represent sections of wood 10cm long, make a frame for a picture which is 30cm long and 30cm wide. How many sections of wood did you need for your frame?

What length of wood do you need?

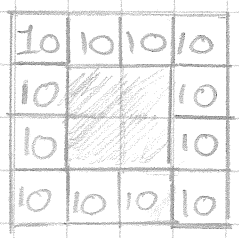
What length of wood will you need to frame a picture that is 120cm by 120cm?

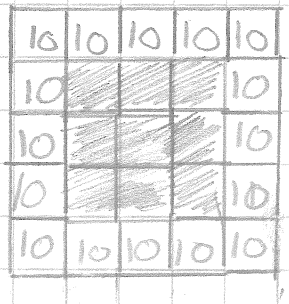
Find a two-stage function machine that will help you work out what length of wood you will need to frame a square picture of any size.

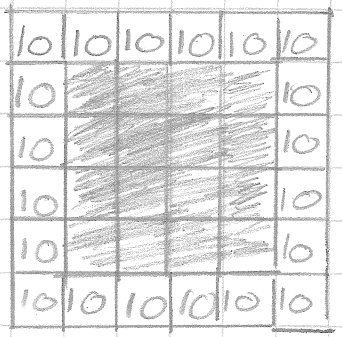
**Challenge**

Karen now decides to make frames for rectangular pictures. What length of wood (10cm wide) will she need to frame a picture that is 120cm long by 80cm wide?

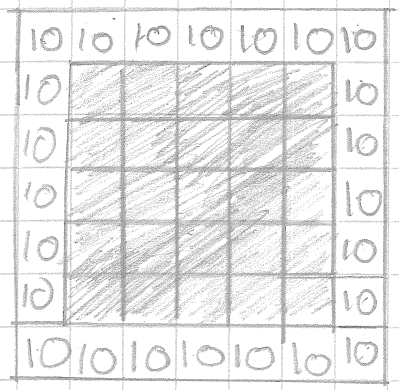
Can you find a quick way of working out how much wood Karen will need to make a rectangular picture frame of any size?




20x20=120 sections 30x30=160cm sections 40x40=200cm sections




50x50=240cm sections

| Picture size cms | Block total length cms |
|---|---|
| 20x20 | 120cm |
| 30x30 | 160cm |
| 40x40 | 200cm |
| 50x50 | 240cm |

P = picture size B = block total

(P x 4) + 40 = B

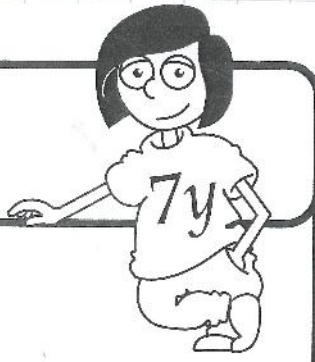
(120 x 4) + 40 = 520cm

To figure out how many blocks you need to use to make a picture frame of any size, you need to times the picture size by 4 then add 40.

//

Well done .

# Matchstick triangles




Resource sheet 5a

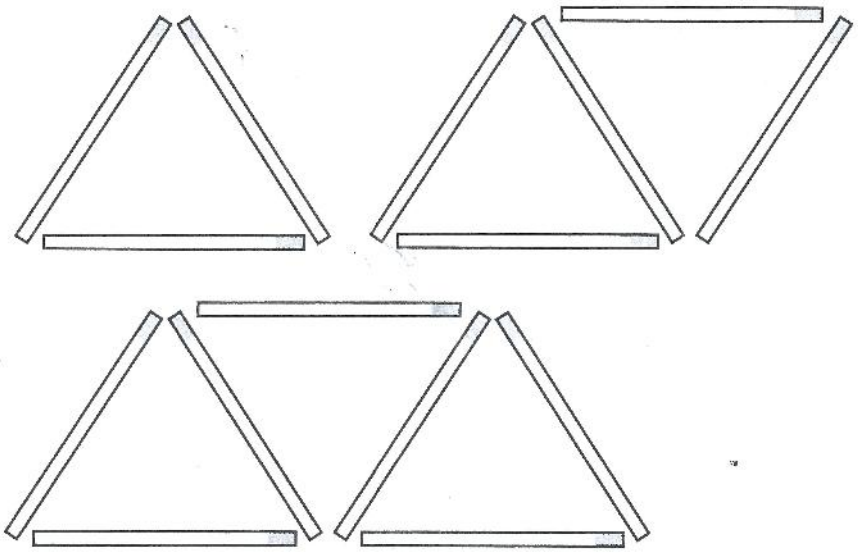
You will need some matchsticks for the following activities.

Here is a pattern of triangles. As you can see, the sides of the triangles are each made of one matchstick.

To make one triangle we need three matchsticks...

...to make two triangles we need five matchsticks...

...and so on.



**Task**

How many matchsticks will you need to make 25 triangles?

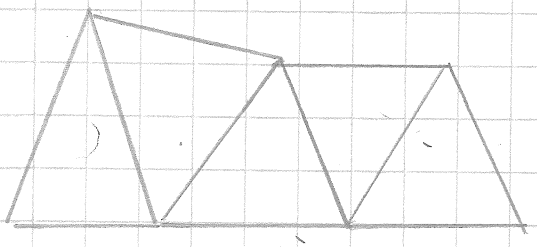
Can you find a two-stage function machine to work out how many matchsticks you will need to make different numbers of triangles?

Put your results into a table like this one.

| Number of triangles (input numbers) | Function machine | Function machine | Number of matchsticks (output numbers) |
|---|---|---|---|
| 1 | | | 3 |
| 2 | ? | ? | 5 |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |

**Challenge**

Now try to write out your way of working out the number of matchsticks you need for different numbers of triangles.



| Number of triangles | Matchsticks |
|---|---|
| 1 | 3 // |
| 2 | 5 // |
| 3 | 7 // |
| 4 | 9 // |
| 5 | 11 // |

$(1 \times 2) + 1 = 3$

$(25 \times 2) + 1 = 51$

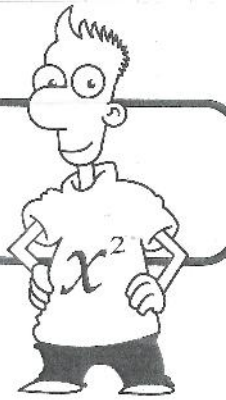
To figure out how many matchsticks you need for 25 triangles, you times 25 by 2 then add 1. //

30-6-15

L.O. To use functions to solve problems.

# Matchstick shapes

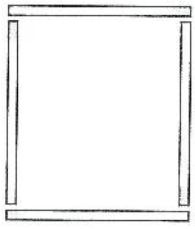
Resource sheet 5b



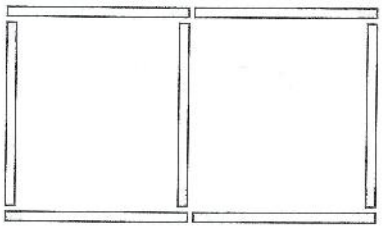

**Task**

Look at each of the following patterns. For each one, try to find a two-stage function machine that allows you to work out the number of matchsticks. Write your results on resource sheet 5c.

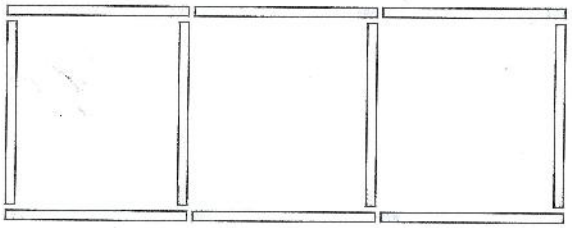
## Square patterns



4 matchsticks

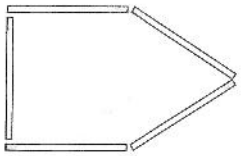


7 matchsticks

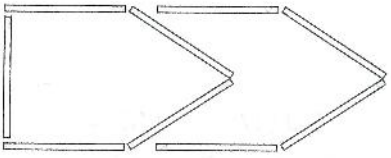


10 matchsticks

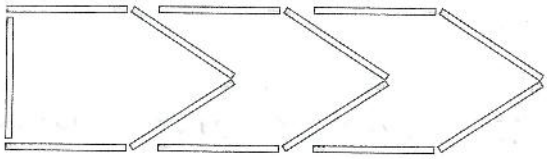
## Arrow patterns



5 matchsticks



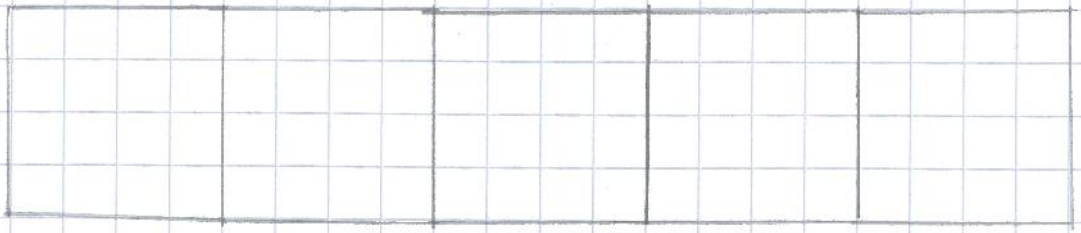
9 matchsticks



13 matchsticks

**Challenge**

Investigate some more shape patterns you can make using matchsticks (crosses, rectangles and so on). Try to find a two-stage function machine to work out the number of matchsticks you will need for each one.



| Number of squares | Matchsticks |
|---|---|
| 1 | 4 |
| 2 | 7 |
| 3 | 10 |
| 4 | 13 |
| 5 | 16 |

S = Squares  M = Matchsticks

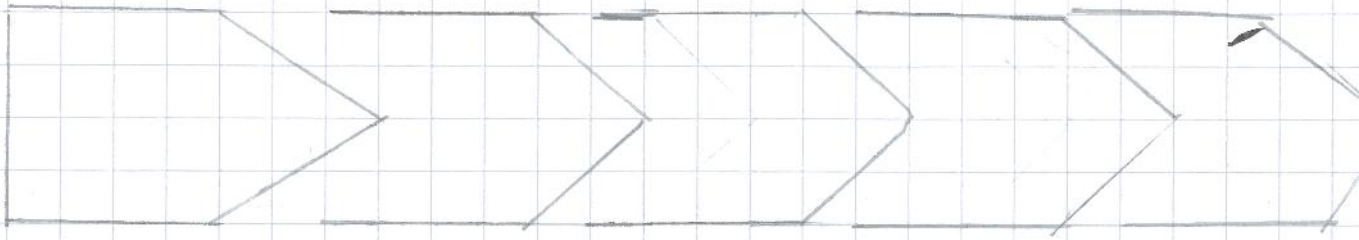
$(S \times 3) + 1 = M$

Example

$(24 \times 3) + 1 = 73$ //

To figure out how many matchsticks you need for any square patterns, you times by 3 and add 1.

//



| Number of arrows | Matchsticks |
|---|---|
| 1 | 5 // |
| 2 | 9 // |
| 3 | 13 // |
| 4 | 17 // |
| 5 | 21 // |

A = arrows M = matchsticks.

$(A \times 4) + 1 = M$

Example

$(10 \times 4) + 1 = 41$

To figure out how many matchsticks you nee for any arrow patterns, you times by 4, then add 1. //

Daiana . Yasmin demonstrated a sound understanding of developing rules from investigative work.

**Level 5: Learner profile**

The materials in this folder consist of a learner profile which is judged to show the characteristics of a learner's standards of attainment which, overall, are at level 5. The commentary should enable the reader to see why the learner profile has been given a best-fit level 5.

The level of detail exemplified here in the commentary is intended to give a good sense of how a best-fit level can be fully justified, in the case of learner profiles. For in-school awarding of best-fit levels at the end of a key stage and in-school moderation, it is still necessary for the teacher to justify that the range of work required is covered and the appropriate standard reached to award a best-fit level. How this is demonstrated is for each school to determine.

A learner profile will typically contain the work of one pupil from across the range of the subject and provide sufficient evidence to enable a judgement to be made on the level which best fits the standard represented in the profile. A learner profile should be as straightforward as the pupil's book or books which show evidence of the characteristics of levels and relevant attainment target(s). Other work which would give the complete picture of a pupil's standards might include a theme/topic book, audio visual recordings, reading record. A commentary on the learner profile will make clear how, on balance, the best fit judgement has been reached and why it is not at the level above or below if it is borderline. The commentary will signpost where the evidence of achievement at a particular level can be seen in the exercise book or other original material produced in the year.

## Mathematics: Learner profile

## Level 5

| **Commentary**<br>*(all comments reflect attainment at level 5 unless indicated otherwise)* | **Source** | **Reference** |
|---|---|---|
| The learner has completed a number of problem solving and reasoning activities.<br><br>In these activities the learner identifies and obtains information to solve problems and makes general statements of her own. | Maths exercise book L5 | p69-71<br>p135-144<br>p150-161 |
| In the investigational work the learner identifies a rule to describe patterns found, constructs formulae and describes situations mathematically using symbols, words and diagrams. This is indicative of work within level 5. | | p150-161 |
| Within the number strand there is clear evidence of level 5 work.<br><br>The learner demonstrates understanding of the number system with evidence of whole number and decimal place value and the effect of multiplying and dividing by 10, 100 and 1000. | Maths exercise book L5 | p3-5 |
| There is very strong evidence of multiplying and dividing whole numbers and decimals at a procedural level. | | p11<br>p17<br>p61-62 |
| The learner is also able to apply these skills in the context of measures when calculating the area of compound shapes. | | p88-89 |
| The learner estimates answers in the context of money and checks calculations by applying inverse operations. | | p61<br>p19 |
| Although the learner demonstrates a sound understanding of calculating fractional and percentage parts of quantities, these particular activities are more characteristic of level 4 | | p49-54 |

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| than level 5. However, during whiteboard extension work the learner demonstrates the ability to calculate more difficult percentages of quantities and measures and this is more characteristic of level 5. | | p55-56 |
| There is also evidence of calculating ratios, which is indicative of work at level 6. | | p79-81 |
| The learner shows an understanding of negative numbers in the context of temperature; however, this does not meet the demand of level 5. Further work demonstrating addition and subtraction of positive and negative numbers beyond the context of temperature would be more characteristic of level 5. | | p75-76 |
| There is evidence of level 5 work within the measures strand.<br><br>The learner is able to measure and draw angles to the nearest degree.<br><br>There is further evidence of solving problems using angle properties of intersecting lines which is characteristic of level 6. | Maths exercise book L5 | <br><br>p81-82<br><br>p72-74 |
| The learner shows an understanding of metric conversions and knows the rough metric equivalents of some imperial units, as evidenced in the conversion of litres to pints and metres to feet and inches. | | p99-100 |
| There is a considerable range of work on area<br><br>and volume,<br><br>which is underpinned by the application of level 5 number skills to calculate the areas and volumes of compound shapes. | | p84-90<br><br>p95-96<br><br>p88-89 |
| Within the geometry strand, the learner demonstrates a clear understanding of simple transformations by translating, reflecting and rotating 2d shapes within all four quadrants, which is characteristic of level 5. There is also evidence of recognising and identifying all symmetries of 2d shapes. | Maths exercise book L5 | p126 |

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| Level 5 work is evidenced within the algebra strand.<br><br>The learner uses co-ordinates in all four quadrants and constructs and uses simple formulae. | Maths exercise book L5 | <br><br>p35-44<br>p116 |
| The learner is also able to find the rule for the next term in a sequence. This is indicative of work at level 6. | | p150-161 |
| Within the data strand there is clear evidence of level 4 and level 5 work.<br><br>The learner draws and interprets frequency diagrams and is able to construct and interpret simple line graphs. This is characteristic of work at level 4 with the exception of the line graph showing the amount of electricity used on cup final day. In this task, the learner is required to explain her reasoning and draw her own conclusions, which is a higher level of skill than is characteristic of level 4. | Maths exercise book L5 | <br><br>p122-124<br>p29-31<br><br>p32 |
| The learner demonstrates that she is able to interpret and compare pie charts using her understanding of proportion to provide reasons for her answers. This is also typical of level 5. Further characteristics of level 5 graph work would include an expectation that the learner constructs graphs using graph paper so allowing the learner to read the graph with greater precision. | | p127-129 |
| The learner demonstrates an ability to calculate the mode, median and the mean of discrete data. This is characteristic of level 4 work.<br><br>The learner is able to compare shoe sizes in two different classes, calculating the mode and the mean of the set of data. She explains reasons for her conclusions based on the mode although there is no reference to the range. However, since it is characteristic of level 5 to use the mean (not just the mode) to compare two simple distributions, and no reference is made to the range, the learner's work on averages is more characteristic of level 4 than level 5. | | p130-131<br><br>p121 |
| The learner is able to calculate probabilities as well as use the probability scale from 0 to 1. This is characteristic of level 5. | | p67-68 |

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**Best-fit level: Summary**

The evidence of work reflects achievement within both the skills and the range of the mathematics programme of study. Levels 4, 5 and 6 were considered as there were characteristics of all three levels evident in the work.

Based on the evidence available, only a small minority of the work is characteristic of level 4 standards of attainment. Nearly all of the level 5 criteria are achieved with aspects of level 6 in evidence. Therefore, the best-fit judgement is a strong level 5.