

There must be
another way!

SAMPLE

The more
this is
are

spotted
pattern...

Have we
tried...

I SEE REASONING - LKS2

TASKS FOR ENRICHING
MATHEMATICAL TALK

MULTIPLICATION

So that's why...

It's simpler
if we...

I've never noticed
that before!

This picture
shows...

I've spotted a
pattern...

It's possible if...

What's different
about...



by GARETH METCALFE

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I SEE REASONING – LKS2

Sample materials - multiplication

This is a free copy of the multiplication section and the multiplication and division section from ***I See Reasoning – LKS2***.

There are 19 sections in the full resource. It is delivered via Etsy as a PDF digital download. To order the resource, [click here](#).

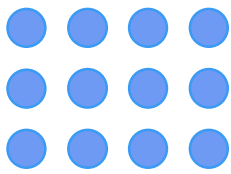
For more information about ***I See Maths***, including training and more resources, visit www.iseemaths.com

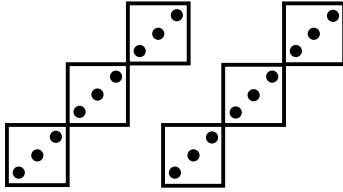
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For more information about the Y4-5 resource ***Maths Outside the Box***, [click here](#).

Which number sentence?

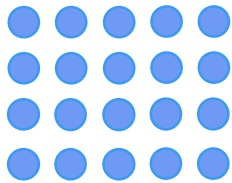
Write a multiplication number sentence for each example. One has been done for you.

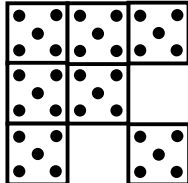

$3 \times 4 = 12$



28			
7	7	7	7

$5+5+5+5+5+5$

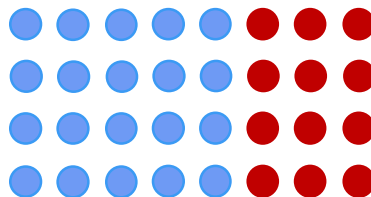




I know... so...

$7 \times 4 = \underline{\quad}$

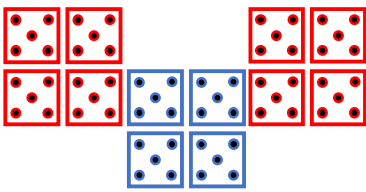
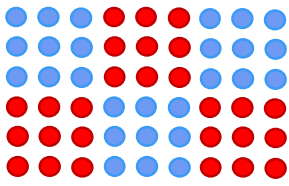
$8 \times 4 = 32$



$8 \times 5 = \underline{\quad}$

Which number sentence?

Write a multiplication number sentence for each example. One has been done for you.

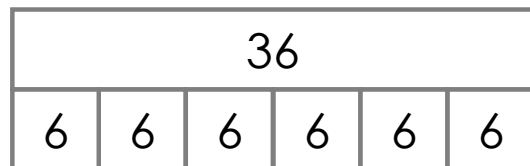
$6 + 12 + 12$ $6 \times 5 = 30$		$5 \times 4 - 5$
$7 \times 4 + 7 + 7$ 		$4 + 8 + 12$

I know... so...

$$6 \times \underline{\quad} = 48$$

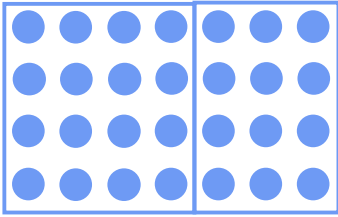
$$6 \times 6 = 36 \longrightarrow$$

$$12 \times 6 = \underline{\quad}$$

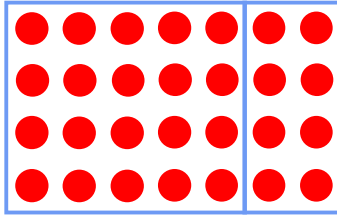


The same as...

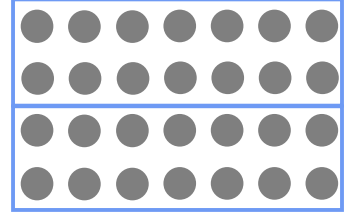
7×4 is the same as:



$$\underline{4} \times \underline{4} + \underline{3} \times \underline{4}$$

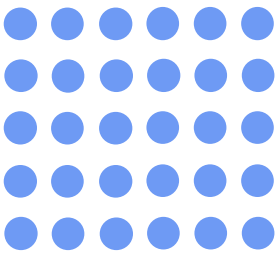


$$\underline{5} \times \underline{4} + \underline{2} \times \underline{4}$$

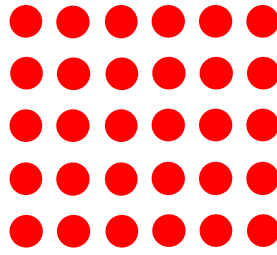


$$\underline{7} \times \underline{2} + \underline{7} \times \underline{2}$$

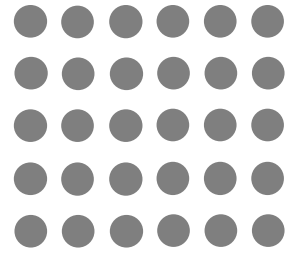
6×5 is the same as:



$$\underline{\quad} \times \underline{\quad} + \underline{\quad} \times \underline{\quad}$$



$$\underline{\quad} \times \underline{\quad} + \underline{\quad} \times \underline{\quad}$$



$$\underline{\quad} \times \underline{\quad} + \underline{\quad} \times \underline{\quad}$$

I know... so...

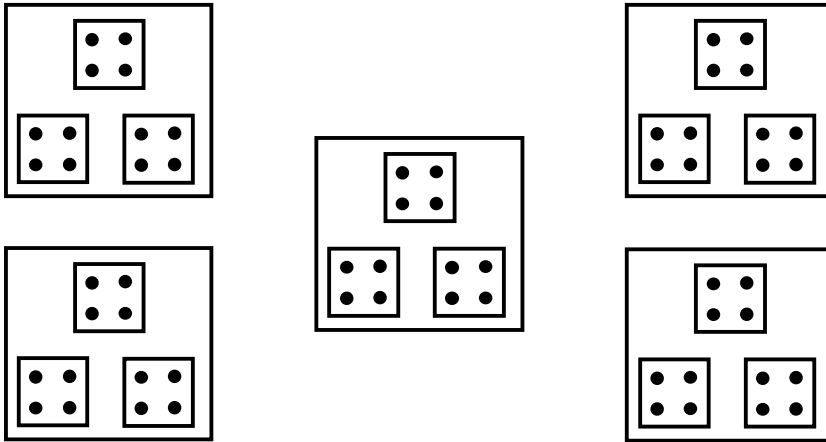
$$18 \times 7 = \underline{\quad}$$

$$16 \times 7 = 112$$

$$8 \times 14 = \underline{\quad}$$

Read the picture

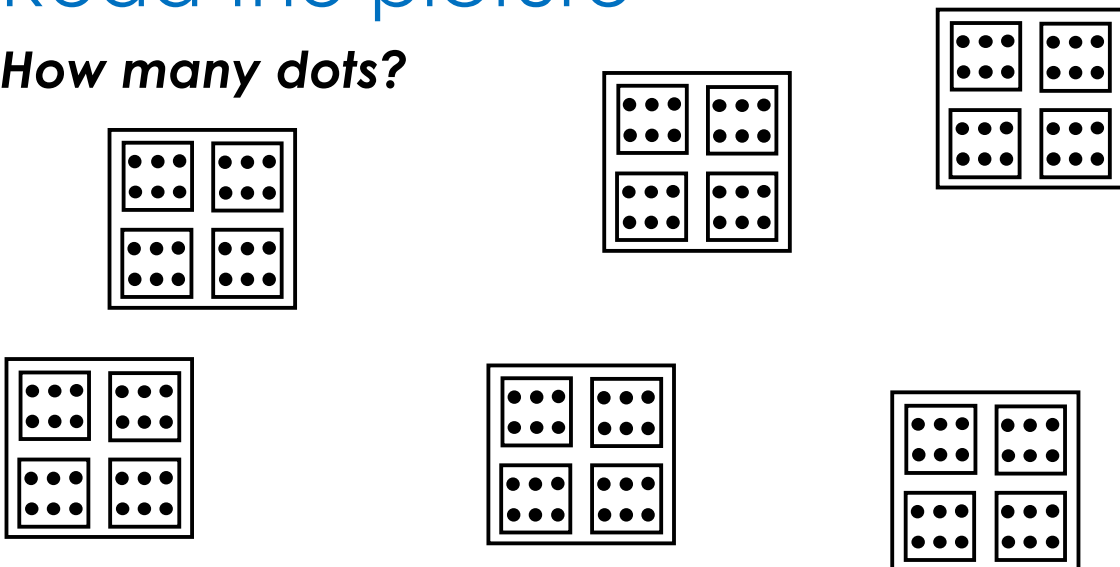
How many dots?



Which number sentence(s) do you see?

Read the picture

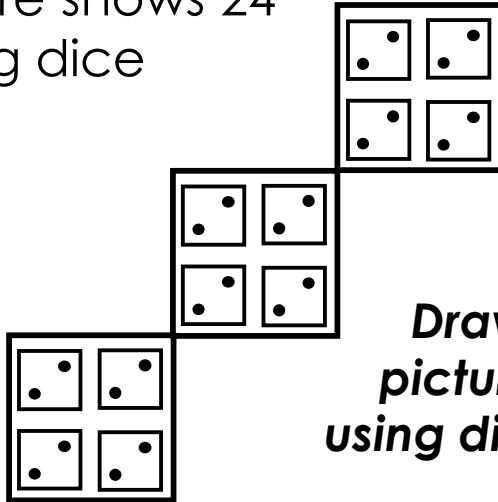
How many dots?



Which number sentence(s) do you see?

Draw

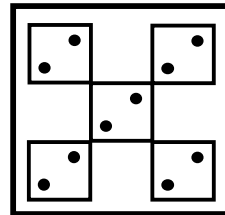
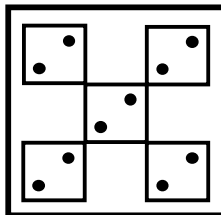
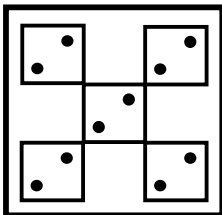
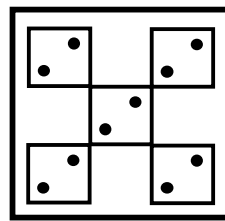
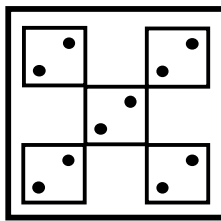
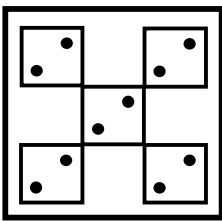
This picture shows 24 dots using dice patterns.



Draw a different picture of 24 dots using dice patterns.

Draw

This picture shows 60 dots using dice patterns.



Draw a different picture of 60 dots using dice patterns.

Is it the same?

half 9×10

7×7

Is **9×5** the same as...

$9 + 9 + 27$

$3 \times 3 \times 5$

Is it the same?

$10 \times 2 \times 8$

24×4

Is **12×8** the same as...

$12 \times 4 \times 4$

$4 \times 3 \times 8$

Matching number sentences

+ number sentence	× number sentence
$6 + 6 + 12$	6×4
$8 + 8 + 8 + 8 + 8$	
	$3 \times 2 \times 2$
$15 + 10 + 5$	

Rank by difficulty

$$15 \times 6$$

$$23 \times 3$$

$$18 \times 5$$

Explain the mistakes

$$34 \times 6$$

Method 1

$\begin{array}{r l} 30 & 4 \\ \hline 6 & 160 \quad 24 \end{array}$	$\begin{array}{r} 160 \\ + 24 \\ \hline 184 \end{array}$
--	--

Method 2

$\begin{array}{r l} 30 & 4 \\ \hline 6 & 180 \quad 24 \end{array}$	$\begin{array}{r} 180 \\ + 24 \\ \hline 210 \end{array}$
--	--

Method 3

$\begin{array}{r l} 3 & 4 \\ \hline 6 & 18 \quad 24 \end{array}$	$18 + 24 = 42$
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Which one's correct?

Find the correct calculation. Spot the mistakes.

$$326 \times 7$$

$$\begin{array}{r} 326 \\ \times 7 \\ \hline 2142 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 326 \\ \times 7 \\ \hline 2289 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 326 \\ \times 7 \\ \hline 2282 \\ \hline 14 \end{array}$$

Missing digits

Fill in the missing digits.

$$4\boxed{} \times 3 = 1\boxed{}5$$

Missing digits

$$\begin{array}{r} \boxed{}8 \\ \times \boxed{} \\ \hline 3\boxed{}0 \end{array}$$

Fill in the missing digits.

Missing digits

$$\begin{array}{r} \boxed{}\boxed{} \\ \times 8 \\ \hline \boxed{}6 \end{array}$$

Fill in the missing digits.

Missing digits

$$\begin{array}{r} 24\boxed{} \\ \times \boxed{} \\ \hline 9\boxed{}4 \end{array}$$

Fill in the missing digits.

How many ways?

$$\begin{array}{r} \boxed{}\boxed{}\boxed{} \\ \times 5 \\ \hline \boxed{}125 \end{array}$$

Fill in the missing digits.

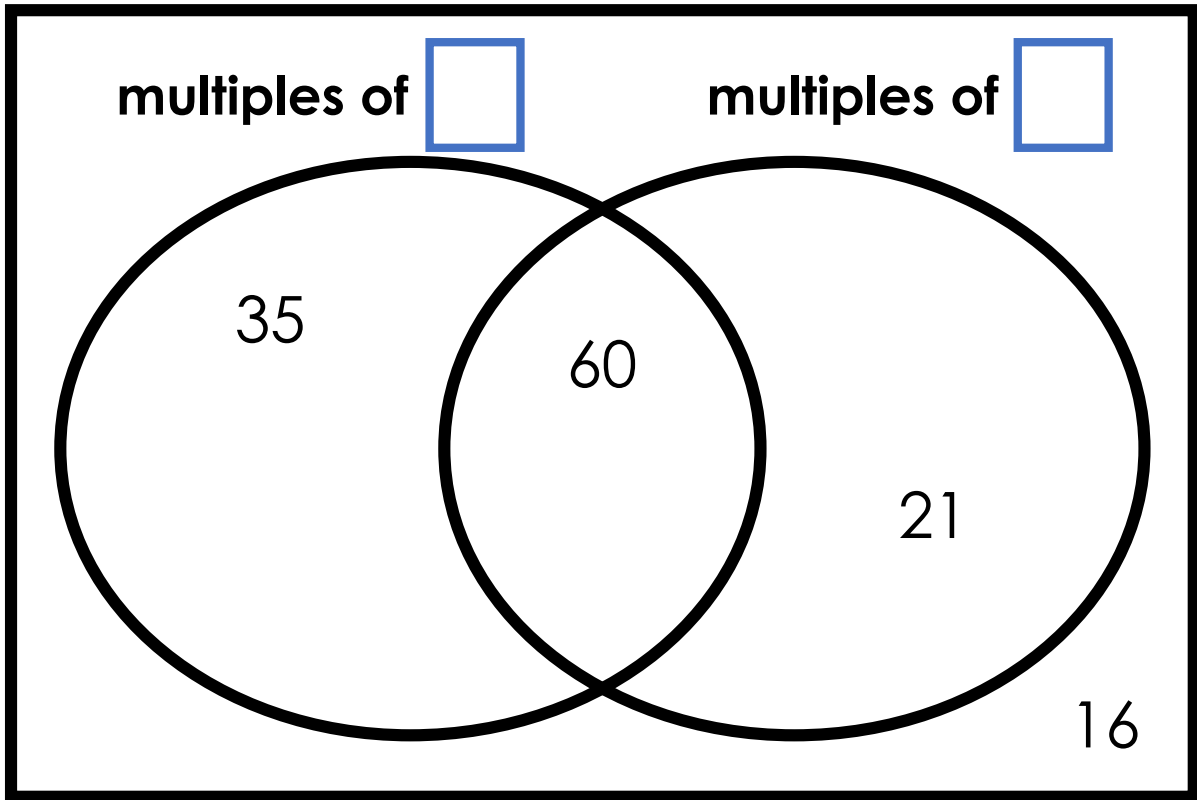
Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

Explore

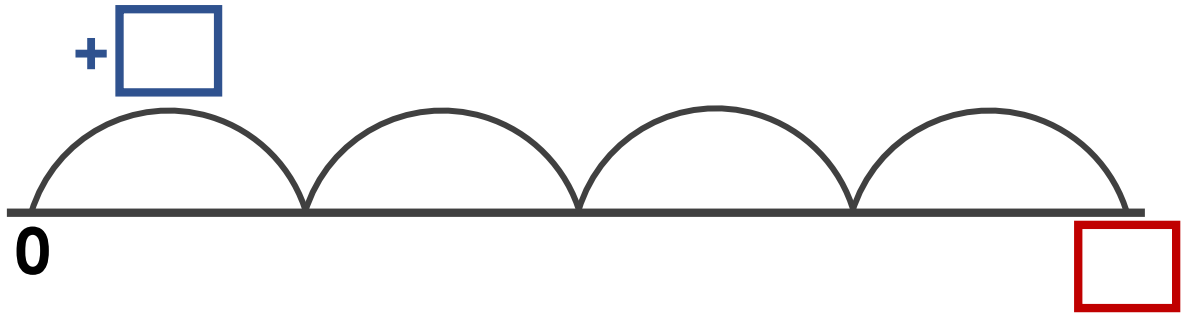
Complete the headings of the Venn diagram:



Add a different number in each section.

Different ways

Each jump on the number line is the same.

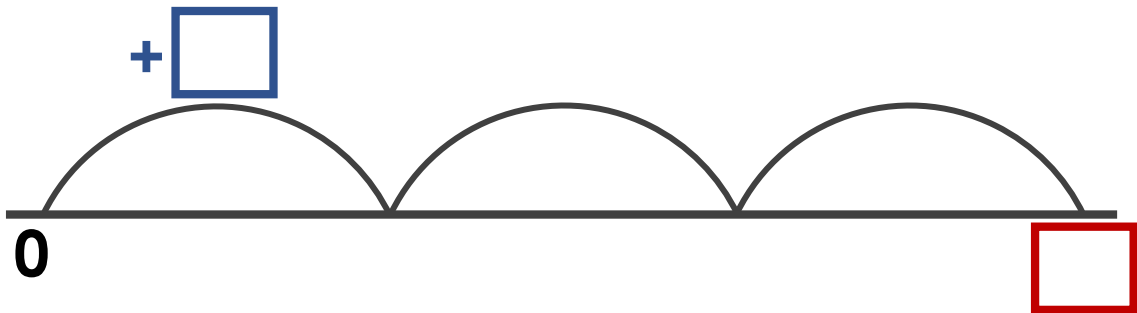


What number could be in the blue box?

more than 30
less than 40

Different ways

Each jump on the number line is the same.



What number could be in the blue box?

more than 100
less than 120

Explain the mistakes

Mistake 1

$$3.5 \times 10 = 3.50$$

Mistake 2

$$35 \times 100 = 350$$

Mistake 3

$$35 \div 10 = 0.35$$

Mistake 4

$$350 \div 10 = 3500$$

Which answer?

$$6 \times \boxed{} = 24 \div 2$$

What is the missing number?

- (a) 2
- (b) 4
- (c) 8

How many ways?

The missing numbers are positive whole numbers.

$$\square \times 8 = 40 - \square$$

Fill in the missing numbers.

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

How many ways?

The missing number is a positive whole number.

$$24 \div \square > 4$$

Fill in the missing number.

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

How many ways?

The missing numbers are positive whole numbers.

$$60 \div \square = 4 \times \square$$

Fill in the missing numbers.

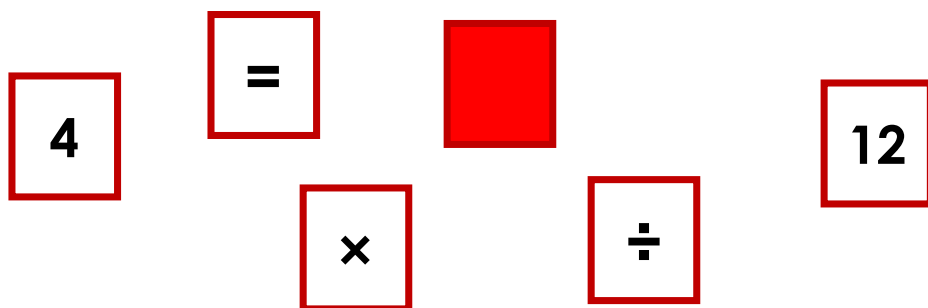
Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

How many ways?

You have these cards. One card is upside down.



How many number sentences can you make?

The red card can be any number.

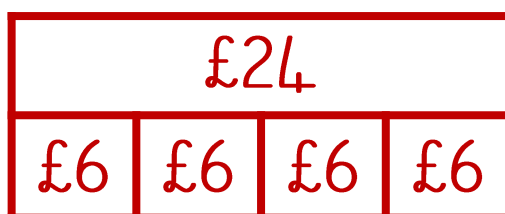
Tip: put the = sign in different positions in your number sentences

Which picture?

Tim and three friends get the train.

The total cost is £24.

How much does each person pay?



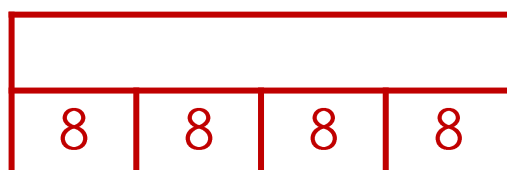
Which bar model represents the question correctly?

Which picture?

Draw lines to match the questions to the bar models:

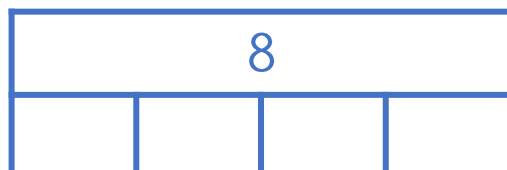
4 friends share 8 cherries.

How many cherries each?



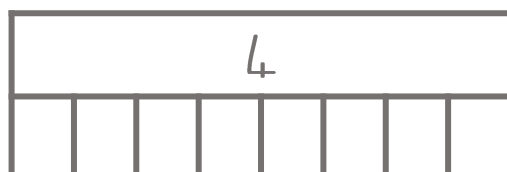
4 pizzas shared by 8 friends.

How much pizza each?



4 friends each have 8 sweets.

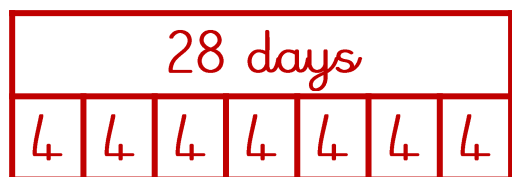
How many in total?



Which picture?

When it's not a leap year there are four weeks in February.

How many days in February on a non-leap year?



Which bar model represents the question correctly?

Which answer?

Mr Jackson has two pairs of trousers, three different ties and four shirts. How many different outfits can he wear?

(a) 14

(b) 9

(c) 24

Fill the gaps

3 glasses fill a bottle

2 bottles fill a jug

6 egg cups fill a glass

___ egg cups fill a bottle

___ glasses fill a jug

___ egg cups fill a jug

___ jugs fill ___ egg cups

I SEE REASONING – LKS2

Answers

Multiplication

Missing digits example 1: $45 \times 3 = 135$

Missing digits example 2: $68 \times 5 = 340$ or $78 \times 5 = 390$

Missing digits example 3: $12 \times 8 = 96$

Missing digits example 4: $241 \times 4 = 964$ or 246×4

How many ways? Four ways ($225 \times 5 = 1125$, $425 \times 5 = 2125$, $625 \times 5 = 3125$, $825 \times 5 = 4125$)

Explore: Multiple of 5 and multiple of 3.

Multiplication and division

Different ways example 1: 8 and 9, also appropriate decimals.

Different ways example 2: Whole numbers in the range $34 \rightarrow 39$, also appropriate decimals.

Which answer? example 1: 2

How many ways? example 1: four ways ($4 \times 8 = 40 - 8$, $3 \times 8 = 40 - 16$, $2 \times 8 = 40 - 24$, $1 \times 8 = 40 - 32$)

How many ways? example 2: Five ways (numbers $1 \rightarrow 5$)

How many ways? example 3: Four ways ($60 \div 1 = 4 \times 15$, $60 \div 3 = 4 \times 5$, $60 \div 5 = 4 \times 3$, $60 \div 15 = 4 \times 1$)

How many ways? example 4: Sixteen ways ($4 \times 3 = 12$, $3 \times 4 = 12$, $12 = 4 \times 3$, $12 = 3 \times 4$, $4 \times 12 = 48$, $12 \times 4 = 48$, $48 = 12 \times 4$, $48 = 4 \times 12$, $12 \div 4 = 3$, $12 \div 3 = 4$, $4 = 12 \div 3$, $3 = 12 \div 4$, $48 \div 12 = 4$, $48 \div 4 = 12$, $12 = 48 \div 4$, $4 = 48 \div 12$)

Which picture? example 1: Red bar model (4 people in total)

Which picture? example 2: Cherries=blue, pizzas=grey, sweets=red

Which picture? example 3: Grey picture represents four 7-day weeks

Which answer? example 2: 24

Fill the gaps: 18 egg cups fill a bottle; 6 glasses fill a jug; 36 egg cups fill a jug.