

$87\frac{1}{2}$
?

Samuel Shepherd

1.

```
>> x=2.75,y=4.5
```

```
x =
```

```
2.7500
```

```
y =
```

```
4.5000
```

```
>> x^2-y
```

```
ans =
```

```
3.0625
```

✓ $2\frac{1}{2}$

```
>> (4*y)^(x+y)
```

```
ans =
```

```
1.2610e+09
```

✓ $2\frac{1}{2}$

```
>> exp(2*x*y)
```

```
ans =
```

5.6077e+10

✓ $2\frac{1}{2}$

>> log(10)*(y^x+x)

NO ASTERISK.

ans =

150.3943

$7\frac{1}{2}$

2.

>> fplot('3*sin(x)',[-pi,pi])

✓

Warning: fplot will not accept character vector or string inputs in a future release. Use fplot(@(x)3.*sin(x)) instead.

> In fplot (line 110)

>> hold

✓

Current plot held

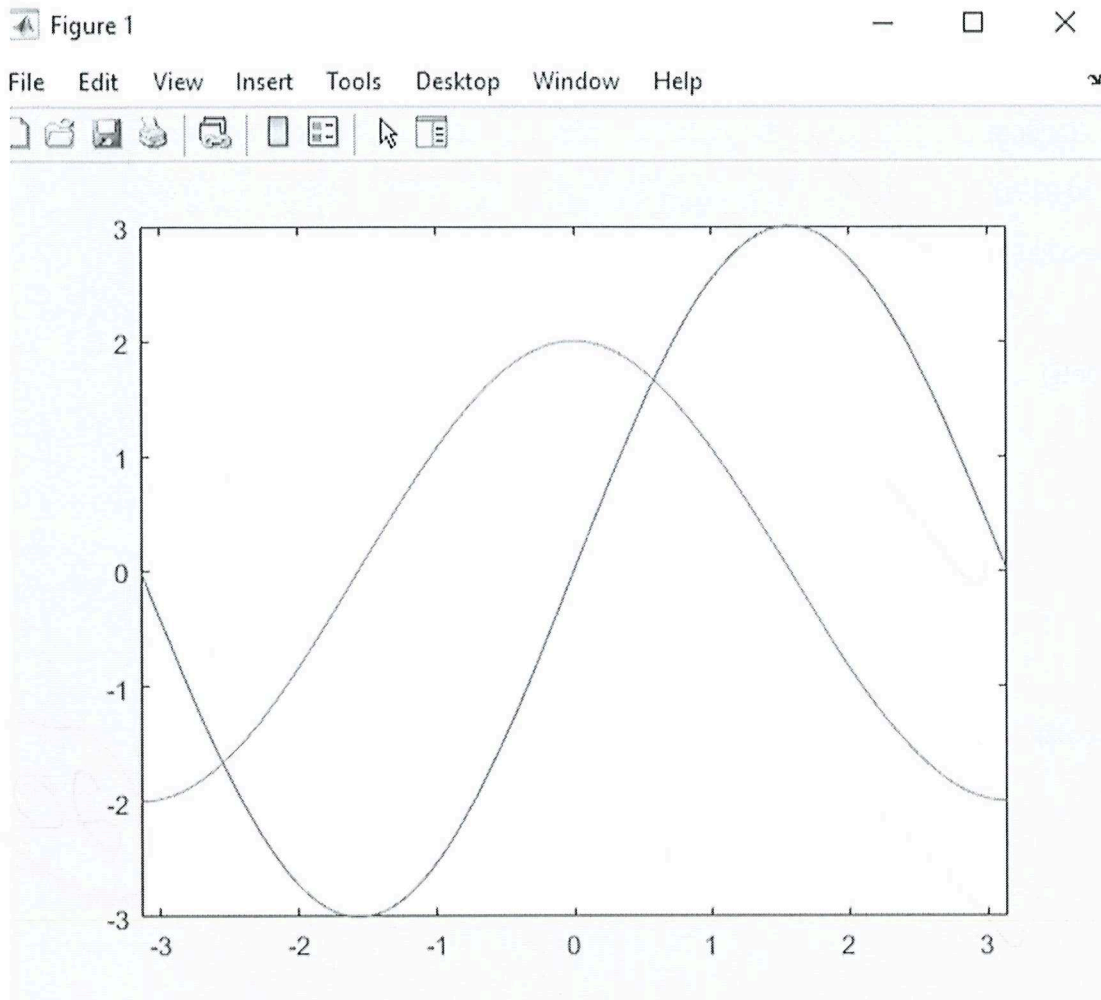
>> fplot('2*cos(x)',[-pi,pi])

✓

12.

Warning: fplot will not accept character vector or string inputs in a future release. Use fplot(@(x)2.*cos(x)) instead.

> In fplot (line 110)



15

3.

INTERSECTIONS NOT PITOWN.

```
>> clear all
```

```
>> syms x
```

```
>> ans=solve(4*x^3-2*x^2+3*x-1)
```

```
ans =
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 1)
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 2)
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 3)
```

```
>> roots=double(ans)
```

roots =

0.3576 + 0.0000i

0.0712 - 0.8331i

0.0712 + 0.8331i

>> sum(roots)

ans =

0.5000

>> prod(roots)

ans =

0.2500

4.

>> clear all

>> syms x

>> int(5*x^2*(x^3+2*x+4)^3)

ans =

$$(5*x^{12})/12 + 3*x^{10} + (20*x^9)/3 + (15*x^8)/2 + (240*x^7)/7 + (140*x^6)/3 + 48*x^5 + 120*x^4 + (320*x^3)/3$$

>> int(3/sqrt(5-x^2),0,1)

ans =

20

$3 \cdot \sin(5^{1/2}/5)$ ✓

>> double(ans)

ans =

1.3909 ✓

25

5.

>> clear all

>> t=[22.8,22.7,23.2,24.4,22.5,24.0,21.8,22.2,23.6,22.1,23.2,23.6,24.2,21.5];

>> xbar=mean(t),m=median(t),s=std(t,1)

xbar =

22.9857 ✓

m =

23 ✓

s =

0.8749 ✓

20

>>

Matlab exam results Lewis BellQ1.

```
>> x=2.75;y=4.5;
```

```
>> x^2-y
```

```
ans =
```

```
3.0625
```

 $\sqrt{2\frac{1}{2}}$

```
>> (4*y)^(x+y)
```

```
ans =
```

```
1.2610e+09
```

 $\sqrt{2\frac{1}{2}}$

```
>> exp(2*x*y)
```

```
ans =
```

```
5.6077e+10
```

 $\sqrt{2\frac{1}{2}}$

```
>> log10(y^x+x)
```

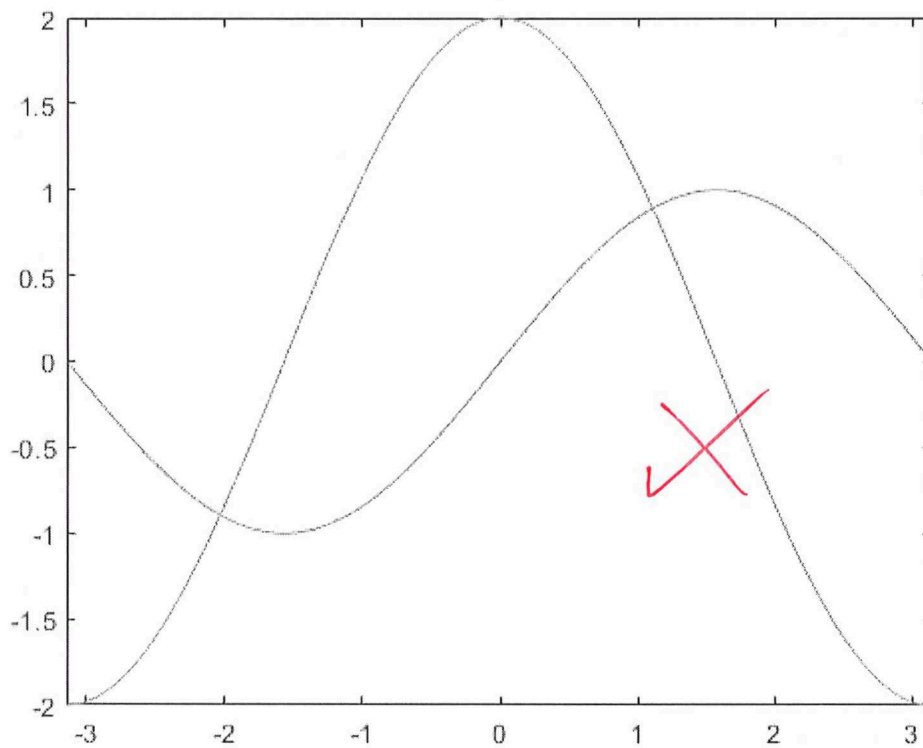
```
ans =
```

```
1.8150
```

 $\sqrt{2\frac{1}{2}}$

Q2.

Graph;

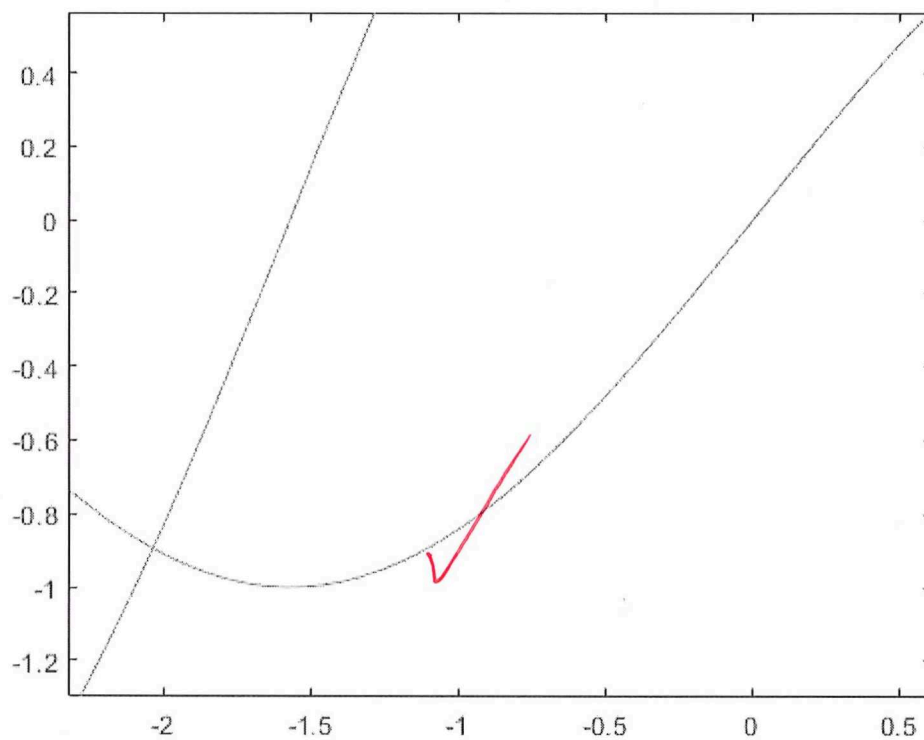


GRAPH IS
WRONG AND
EQUATIONS NOT
SHOWN.

Point of intersection; $(-0.8, -2)$

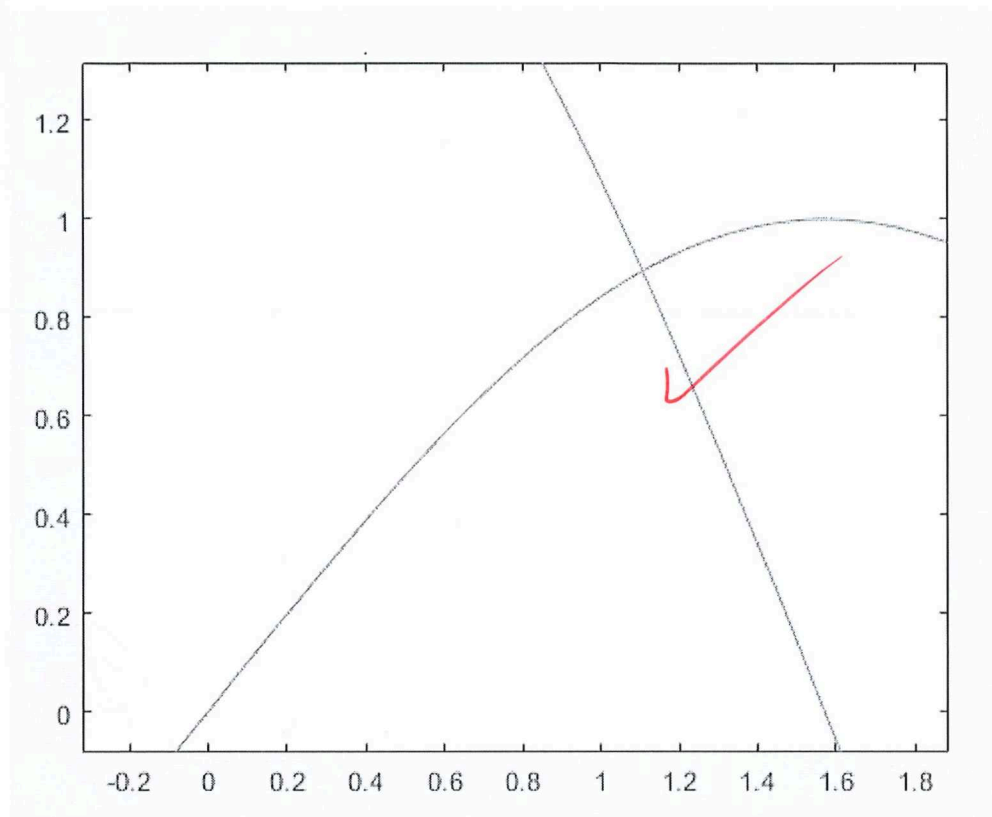
$(-2, -0.8)$

(x, y)



Point of intersection; (0.8,1.2)

CARRIES error



12

Q3.

```
>> clear all
```

```
>> syms x
```

```
>> ans=solve(4*x^3-2*x^2+3*x-1)
```

ans =

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 1)
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 2)
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 3)
```

```
>> roots=double(ans)
```

roots =

0.3576 + 0.0000i

0.0712 - 0.8331i

0.0712 + 0.8331i

>> sum(roots)

ans =

0.5000

>> prod(roots)

ans =

0.2500

20

Q4.

>> syms x

>> int(5*x^2*(x^3+2*x+4)^3)

ans =

$$(5*x^{12})/12 + 3*x^{10} + (20*x^9)/3 + (15*x^8)/2 + (240*x^7)/7 + (140*x^6)/3 + 48*x^5 + 120*x^4 + (320*x^3)/3$$

>> int(3/sqrt(5-x^(1/2))/5)

ans =

$-(6 \cdot 2^{1/2} \cdot (10 - x)^{1/2})/5$

>> int(3/sqrt(5-x^2),0,1)

ans =

3*asin(5^(1/2)/5) ✓

>> double(ans)

ans =

1.3909 ✓

25

Q5.

>> clear all

>> t=[22.8 22.7 23.2 24.4 22.5 24.0 21.8 22.2 23.6 22.1 23.2 23.6 24.2 21.5];

>> xbar=mean(t),m=median(t),s=std(t,1)

xbar =

22.9857 ✓

m =

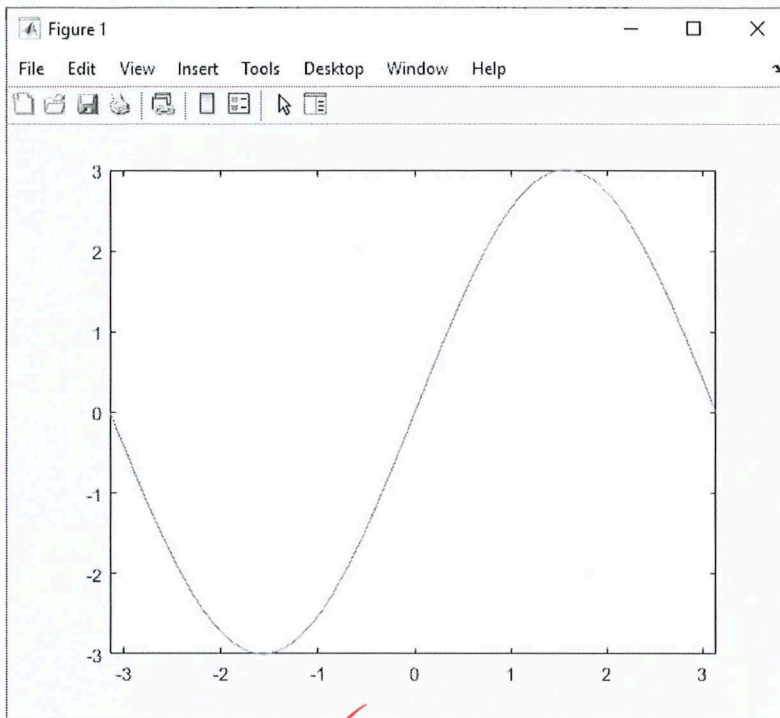
23 ✓

s =

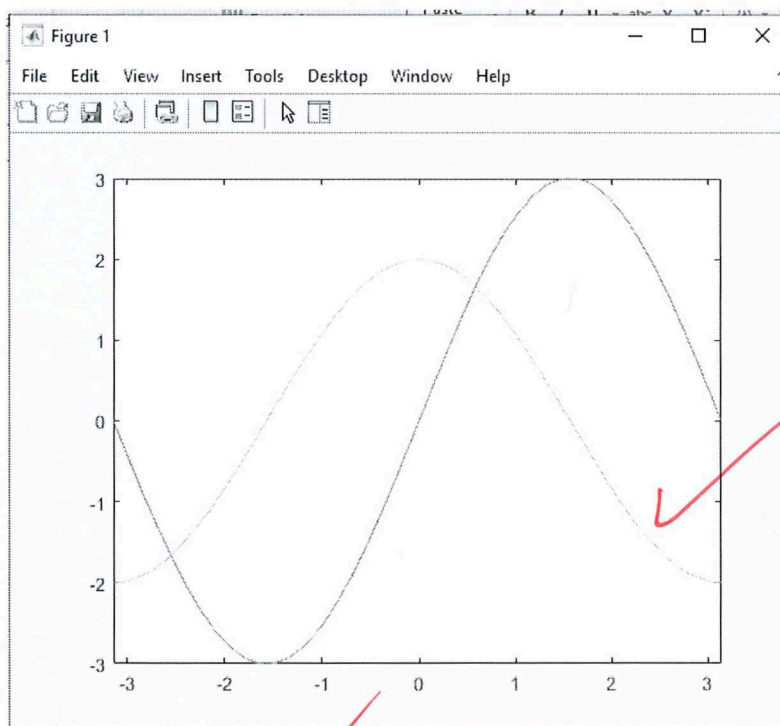
0.8749



20



`fplot('3*sin(x)',[-pi,pi])`



`fplot('2*cos(x)',[-pi,pi])`

```
x=2.75;y=4.5;
```

```
>> x^2-y
```

```
ans =
```

```
3.0625
```

✓ $2^{\frac{1}{2}}$

```
>>
```

```
>> (4*y)^(x+y)
```

```
ans =
```

```
1.2610e+09
```

✓ $2^{\frac{5}{2}}$

```
>> exp(2*z*y)
```

```
Unrecognized function or variable 'z'.
```

```
>>
```

```
>> exp(2*x*y)
```

```
ans =
```

```
5.6077e+10
```

✓ $2^{\frac{6}{2}}$

```
>> log10(y^x+x)
```

```
ans = 1.8150
```

✓ $2^{\frac{5}{2}}$

```
>> fplot('3*sin(x)',[-pi,pi])
```

Warning: fplot will not accept character vector or string inputs in a future release. Use fplot(@(x)3.*sin(x)) instead.

10

> In fplot (line 110)

>> hold

Current plot held

>> fplot('3*sin(x)',[-pi,pi])

Warning: fplot will not accept character vector or string inputs

in a future release. Use fplot(@(x)3.*sin(x)) instead.

> In fplot (line 110)

>> hold

Current plot released

>> hold

Current plot held

>> fplot('2*cos(x)',[-pi,pi])

Warning: fplot will not accept character vector or string inputs in a future release. Use

fplot(@(x)2.*cos(x)) instead.

> In fplot (line 110)

>> clear all

>> syms x

>> ans=solve(4*x^3-2*x^2+3*x-1)

ans = root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 1)

root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 2)

root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 3)

>> roots=double(ans)

roots = 0.3576 + 0.0000i

0.0712 - 0.8331i

0.0712 + 0.8331i

>> sum(roots)

15

INTERSECTIONS NOT
SHOWN FOR Q2

ans = 0.5000 ✓

>> prod(roots) ✓

ans = 0.2500

>> syms x

>> int(5*x^2*(x^3+2*x+4)^3)

ans = (5*x^12)/12 + 3*x^10 + (20*x^9)/3 + (15*x^8)/2 + (240*x^7)/7 + (140*x^6)/3 + 48*x^5 + 120*x^4 + (320*x^3)/3 ✓

>> int(3/sqrt(5-x^2),0,1)

DOUBLE MINUS.

ans = 3*log(5^(1/2)/5 + 30^(1/2)/5)

>> double(ans)

ans = 1.3005

>> clear all

>> t= [22.8 22.7 23.2 24.4 22.5 24.0 21.8 22.2 23.6 22.1 23.2 23.6 24.2 21.5];

>> xbar=mean(t),m=median(t),s=std(r,1)

xbar = 22.9857

m = 23

s = 0.8749

>> xbar

xbar = 22.9857

>> m ✓

m = 23

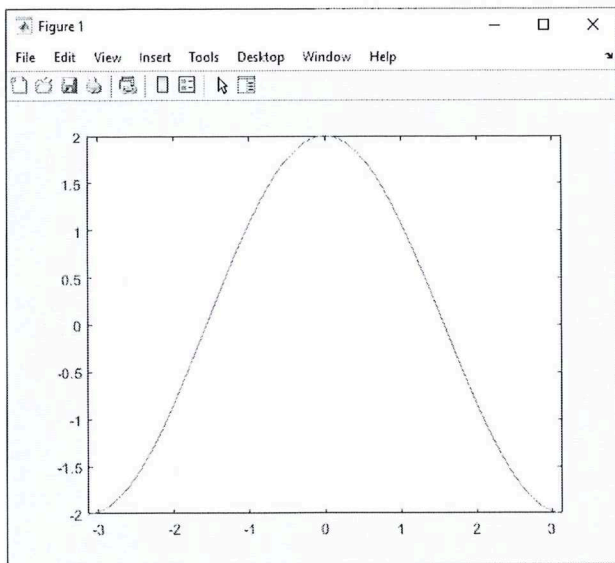
>> s ✓

s = 0.8749 ✓

20

20

20



100

Dylan Marsh

Mathematics – Matlab Exam

22/04/24

Question 1

a)

```
>> x=2.75;y=4.5;
```

```
>> x^2-y
```

ans =

3.0625

✓ $2\frac{1}{2}$

b)

```
>> (4*y)^(x+y)
```

ans =

1.2610e+09

✓ $2\frac{1}{2}$

c)

```
>> exp(2*x*y)
```

ans =

5.6077e+10

✓ $2\frac{1}{2}$

d)

```
>> log10(y^x+x)
```

ans =

1.8150

✓ $2\frac{1}{2}$

10

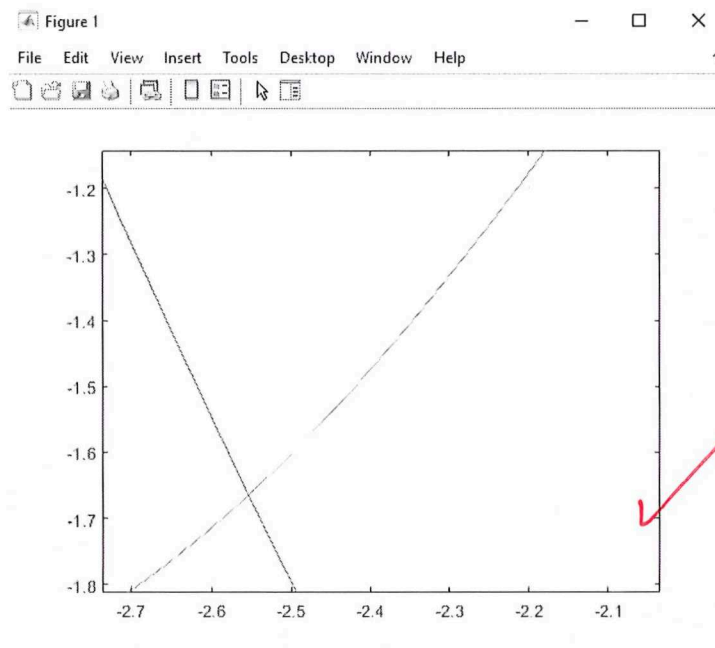
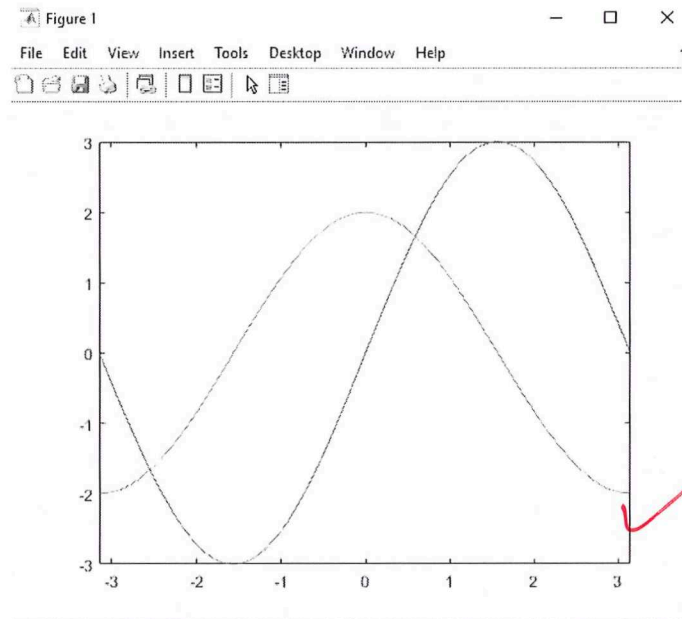
Question 2

```
>> fplot('3*sin(x)',[-pi,pi])
```

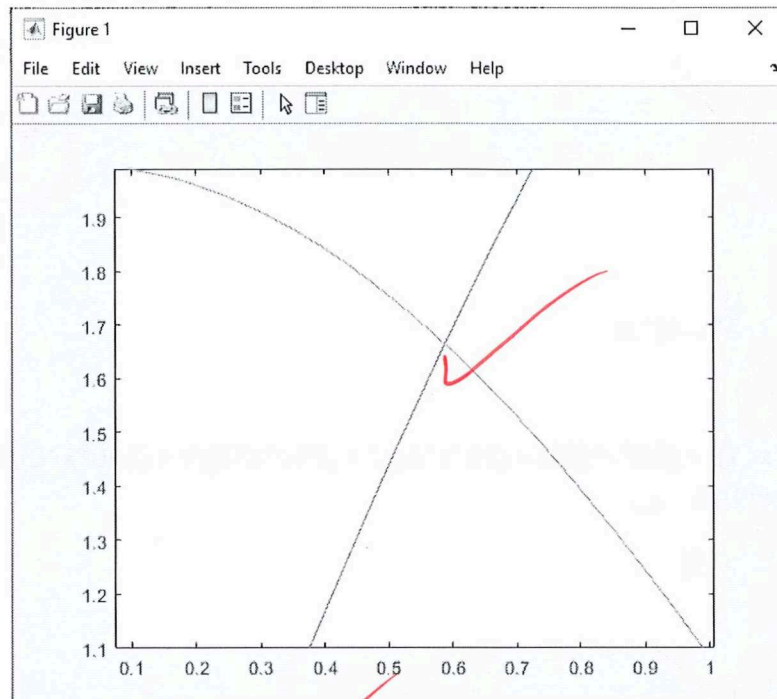
```
>> hold
```

Current plot held

```
>> fplot('2*cos(x)',[-pi,pi])
```



Point of Intersection $(-2.55, -1.67)$



25

Point of Intersection (0.59,1.66) ✓

Question 3

```
>> clear all
```

```
>> syms x
```

```
>> ans=solve(4*x^3-2*x^2+3*x-1)
```

```
ans =
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 1)
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 2)
```

```
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 3)
```

```
>> roots=double(ans)
```

```
roots =
```

```
0.3576 + 0.0000i
```

```
0.0712 - 0.8331i
```

```
0.0712 + 0.8331i ✓
```

```
>> sum(roots)
```

```
ans =
```

```
0.5000 ✓
```

```
>> prod(roots)
```

```
ans =
```

```
0.2500
```



20

Question 4

```
>> int(5*x^2*(x^3+2*x+4)^3)
```

```
ans =
```

```
(5*x^12)/12 + 3*x^10 + (20*x^9)/3 + (15*x^8)/2 + (240*x^7)/7 + (140*x^6)/3 + 48*x^5 +  
120*x^4 + (320*x^3)/3
```



```
>> int(3/sqrt(5-x^2),0,1)
```

```
ans =
```

```
3*asin(5^(1/2)/5)
```



```
>> double(ans)
```

```
ans =
```

```
1.3909
```



25

Question 5

```
>> clear all
```

```
>> t=[22.8 22.7 23.2 24.4 22.5 24.0 21.8 22.2 23.6 22.1 23.2 23.6 24.2 21.5]
```

```
t =
```

Columns 1 through 6

22.8000 22.7000 23.2000 24.4000 22.5000 24.0000

Columns 7 through 12

21.8000 22.2000 23.6000 22.1000 23.2000 23.6000

Columns 13 through 14

24.2000 21.5000

```
>> xbar=mean(t),m=median(t),s=std(t,1)
```

```
xbar =
```

22.9857 ✓

```
m =
```

23 ✓

```
s =
```

0.8749 ✓

20

MatLab Exam

James Summers – 2320629

Q1.

```
>> x=2.75,y=4.5
```

```
x =
```

```
2.7500
```

```
y =
```

```
4.5000
```

```
>> x^2-y
```

```
ans =
```

```
3.0625
```

 $\checkmark 2^{\frac{1}{2}}$

```
>> (4*y)^(x+y)
```

```
ans =
```

```
1.2610e+09
```

 $\checkmark 2^{\frac{1}{2}}$

```
>> exp(2*x*y)
```

```
ans =
```

```
5.6077e+10
```

 $\checkmark 2^{\frac{1}{2}}$

```
>> log10(y^x+x)
```

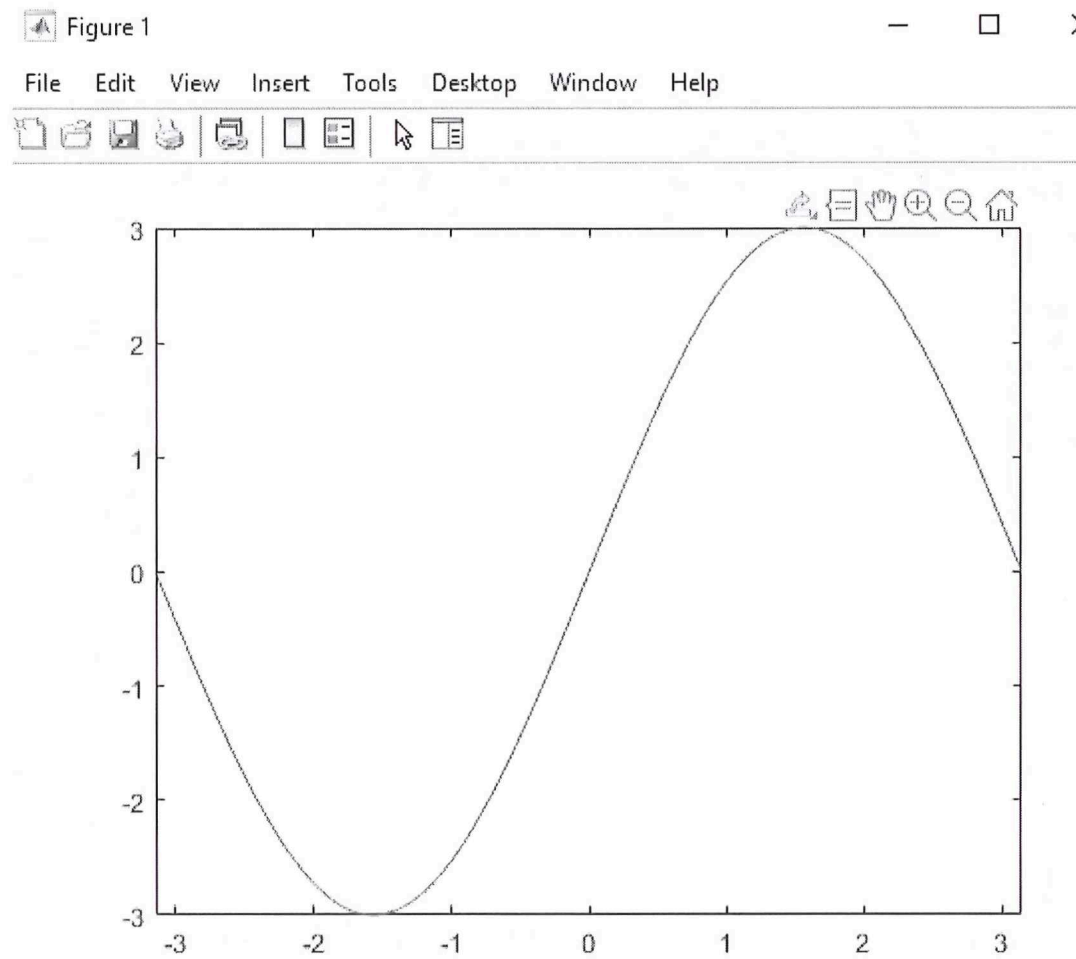
```
ans =
```

```
1.8150
```

 $\checkmark 2^{\frac{1}{2}}$

10

Q2

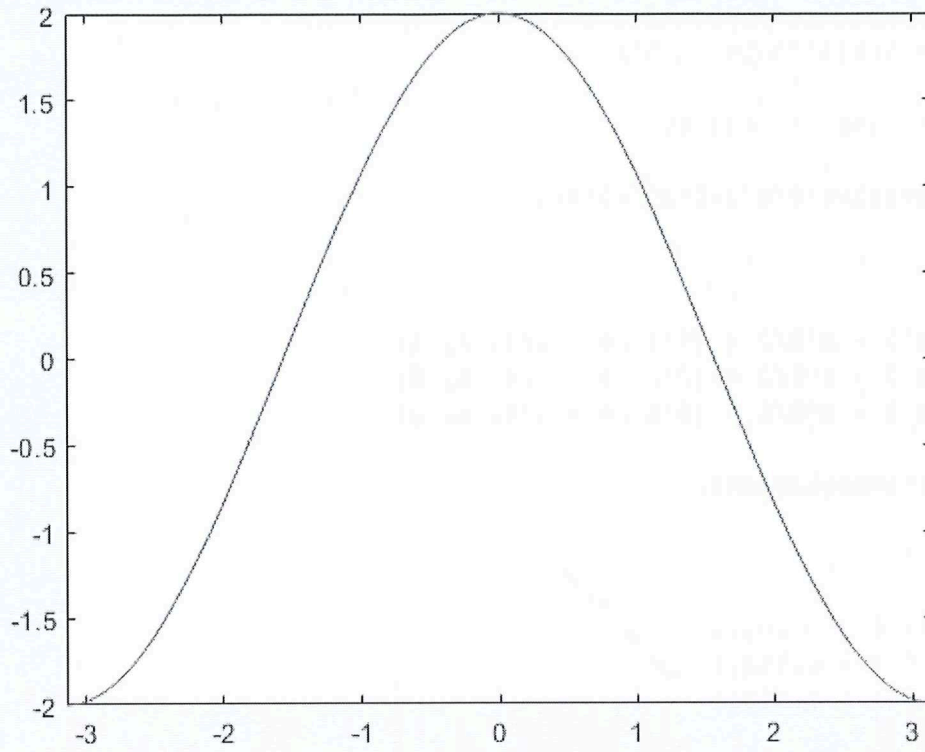


WORKING NOT SHOW.

INTERSECTION NOT SHOW.

Figure 1

File Edit View Insert Tools Desktop Window Help



Q3.

3

Q3.

```
>> clear all
>> syms x
>> ans=solve(4^3-2*x^2+3*x-1)
ans=solve(4^3-2*x^2+3*x-1)
      ↑
Invalid use of operator.

>> ans=solve(4*x^3-2*x^2+3*x-1)

ans =

root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 1)
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 2)
root(z^3 - z^2/2 + (3*z)/4 - 1/4, z, 3)

>> roots=double(ans)

roots =

    0.3576 + 0.0000i
    0.0712 - 0.8331i
    0.0712 + 0.8331i

>> sum(roots)

ans =

    0.5000

>> prod(roots)

ans =

    0.2500
```

20

Q4.

```
syms x
int(5*x^2*(x^3+2*x+4)^3)
nt(5*x^2*(x^3+2*x+4)^3)
```

valid expression. When calling a function or indexing a variable, use parentheses. Otherwise, check for mismatched delimiters.

Did you mean:
int(5*x^2*(x^3+2*x+4)^3)

```
s =
5*x^12/12 + 3*x^10 + (20*x^9)/3 + (15*x^8)/2 + (240*x^7)/7 + (140*x^6)/3 + 48*x^5 + 120*x^4 + (320*x^3)/3
```

Did you mean:

```
>> int(3/sqrt(5-x^2))
```

ans =

```
3*asin((5^(1/2)*x)/5)
```

```
>> int(3/SQRT(5-X^2),0,1)
```

Unrecognized function or variable 'X'.

Did you mean:

```
>> int(3/sqrt(5-x^2),0,1)
```

ans =

```
3*asin(5^(1/2)/5)
```

```
>> double ans
```

ans =

```
97 110 115
```

```
>> 3*asin(5^(1/2)/5)
```

ans =

```
1.3909
```

25

Q5.

```
>> clear all
>> t=[22.8 22.7 23.2 24.4 22.5 24.0 21.8 22.2 23.6 22.1 23.2 23.6 24.2 21.5];
>> xbar=
xbar=
↑
```

Error: Invalid expression. Check for missing or extra characters.

```
>> xbar=mean(t)
```

xbar =

22.9857 ✓

```
>> m=median(t)
```

m =

23 ✓

```
>> s=std(t,1)
```

s =

0.8749 ✓

20

Rhys Willis

22/04/24

97

```
>> x=2.75;y=4.5;
```

```
>> x^2-y
```

```
ans =
```

3.0625

✓ $2\frac{1}{2}$

```
>> (4*y)^(x+y)
```

```
ans =
```

1.2610e+09

✓ $2\frac{1}{2}$

```
>> exp(2*x*y)
```

```
ans =
```

5.6077e+10

✓ $2\frac{1}{2}$

```
>> log10(y^x+x)
```

```
ans =
```

1.8150

✓ $2\frac{1}{2}$

10

```
>> fplot('3*sin(x)',[-pi,pi])
```

Warning: fplot will not accept character vector or string inputs in a future release. Use
fplot(@(x)3.*sin(x)) instead.

```
> In fplot (line 110)
```

```
>> hold
```

Current plot held

```
>> fplot('2*cos(x)',[-pi,pi])
```

```
fplot('2*cos(x)',[-pi,pi])
```

↑

Invalid expression. When calling a function or indexing a variable, use parentheses. Otherwise, check for

mismatched delimiters.

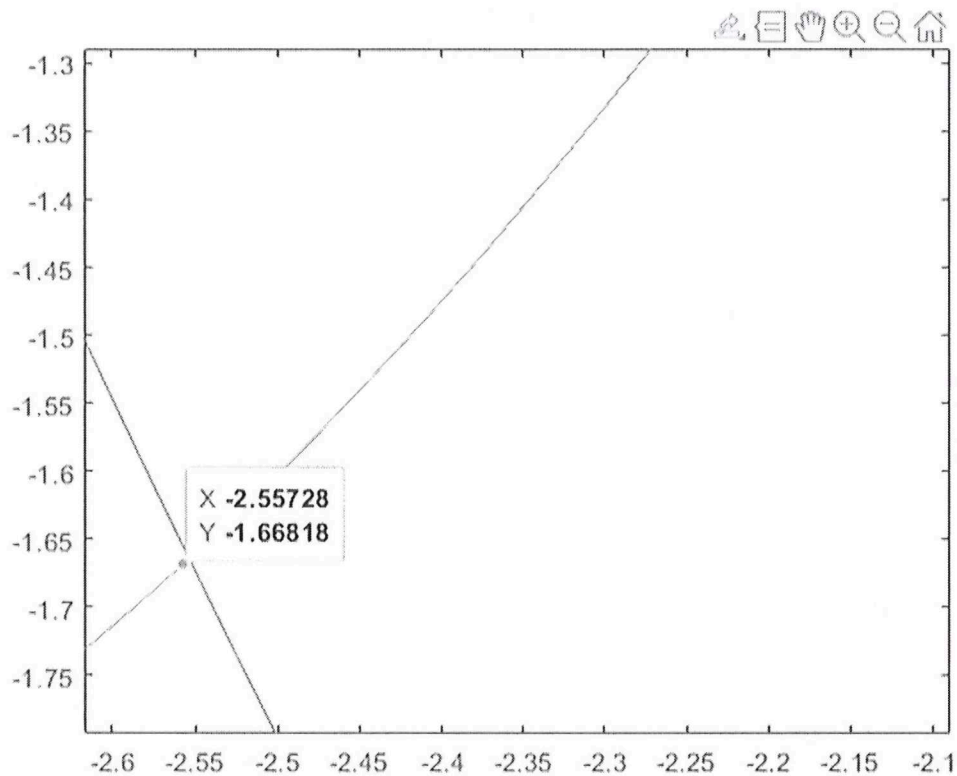
Did you mean:

```
>> fplot('2*cos(x)',[-pi,pi])
```

Warning: fplot will not accept character vector or string inputs in a future release. Use

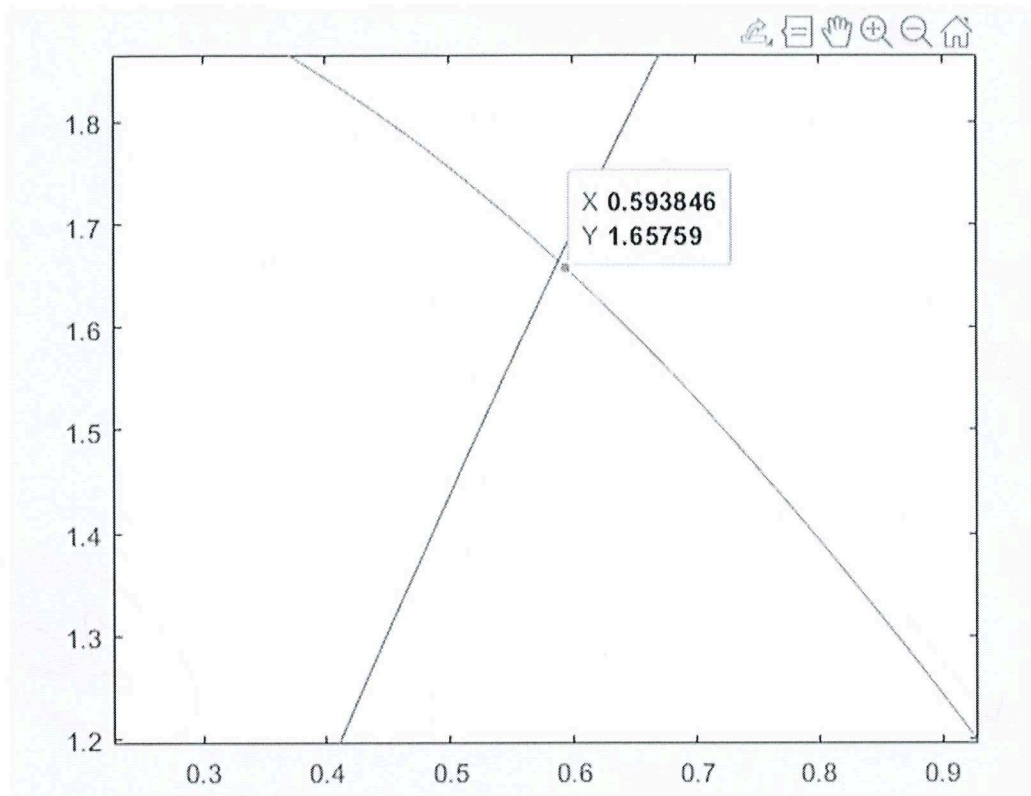
`fplot(@(x)2.*cos(x))` instead.

> In fplot (line 110)



X=2.55 y=-1.68

Full plot not shown.



X=0.59 Y=1.66

```
>> clear all
```

```
>> syms x
```

```
>> ans=solve(4*x^3-2*x^2+3*x-1)
```

ans =

root($z^3 - z^2/2 + (3z)/4 - 1/4$, z, 1)

root($z^3 - z^2/2 + (3z)/4 - 1/4$, z, 2)

root($z^3 - z^2/2 + (3z)/4 - 1/4$, z, 3)

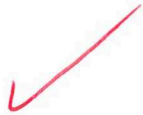
```
>> roots=double(ans)
```

roots =

0.3576 + 0.0000i

0.0712 - 0.8331i

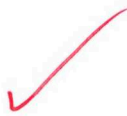
0.0712 + 0.8331i



>> sum(roots)

ans =

0.5000



>> prod(roots)

ans =

0.2500



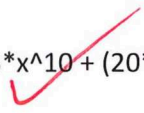
20

>> syms x

>> int(5*x^2*(x^3+2*x+4)^3)

ans =

$$\frac{5x^{12}}{12} + 3x^{10} + \frac{20x^9}{3} + \frac{15x^8}{2} + \frac{240x^7}{7} + \frac{140x^6}{3} + 48x^5 + 120x^4 + \frac{320x^3}{3}$$



>> int(3/sqrt(5-x^2),0,1)

ans =

$3 \cdot \arcsin\left(\frac{\sqrt{5-x^2}}{\sqrt{5}}\right)$



>> double(ans)

ans =

1.3909



25

```
>> clear all
```

```
>> t=[22.8 22.7 23.2 24.4 22.5 24.0 21.8 22.2 23.6 22.1 23.2 23.6 24.2 21.5];
```

```
>> xbar=mean(t),me=median(t),s=std9t,1)
```

```
xbar=mean(t),me=median(t),s=std9t,1)
```

↑

Invalid expression. When calling a function or indexing a variable, use parentheses. Otherwise, check for

mismatched delimiters.

```
>> xbar=mean(t),me=median(t),s=std(t,1)
```

xbar =

22.9857



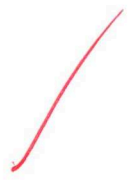
me =

23



s =

0.8749



20

```
>>
```