

Thomas Grennan 1809799

69%

Agree
NF

1)

>> x = 2.3

x = 2.3000

>> y = 3.1

y = 3.1000

a)

>> x²-y

ans = 2.1900

b)

>> (4*y)^(x-y)

ans = 0.1334

c)

>> exp(3*x*y)

ans = 1.9479e+09

d)

>> log₁₀(y^x-x)

ans = 1.0490

$\frac{10}{10}$

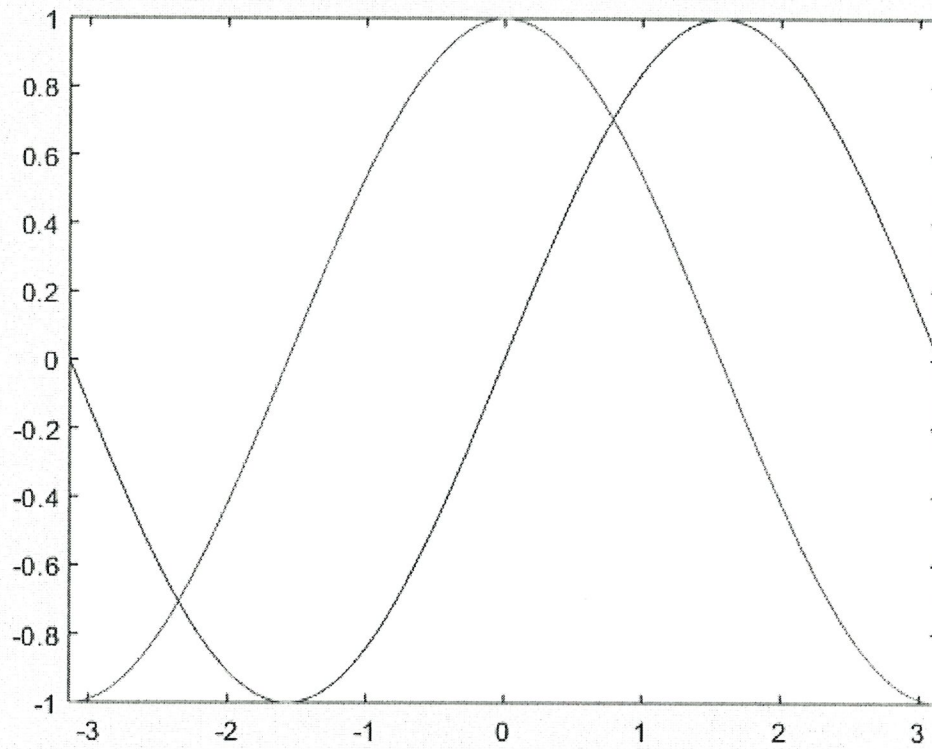
3)

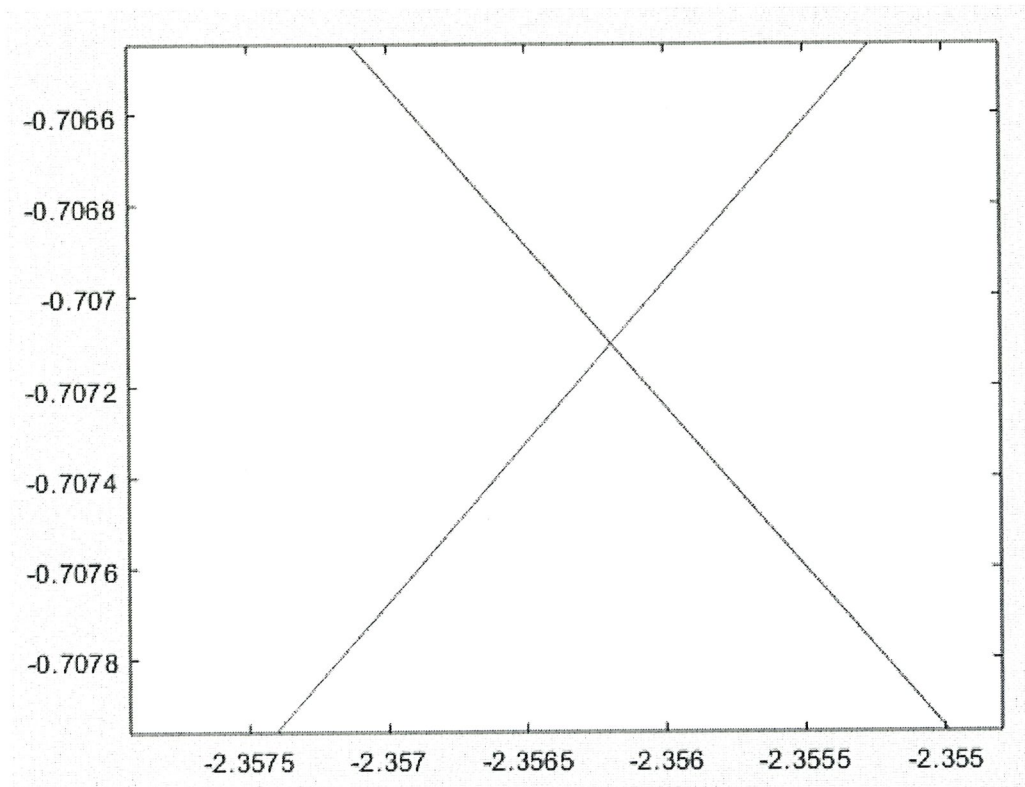
>> fplot('sin(x)',[-pi,pi])

>> hold

Current plot held

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

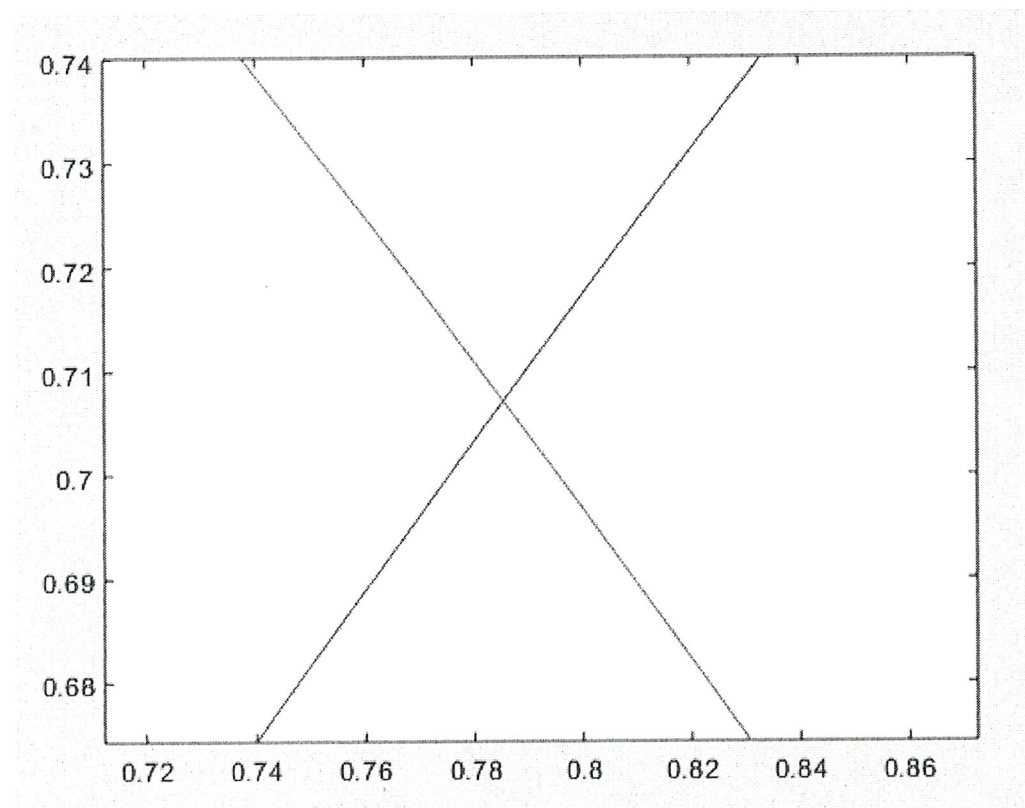




2 ✓

Intersection (-2.35, -0.71)

2



2 ✓

Intersection (0.78, 0.71)

3

$\frac{24}{25}$

4)

>> 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)

>> y1=ans(1),y2=ans(2),y3=ans(3)

y1 =root(z^3 + z^2/2 - (3*z)/4 + 1/4, z, 1)

y2 =root(z^3 + z^2/2 - (3*z)/4 + 1/4, z, 2)

y3 =root(z^3 + z^2/2 - (3*z)/4 + 1/4, z, 3)

>> double(ans)

ans =

-1.2558 + 0.0000i

0.3779 - 0.2372i

0.3779 + 0.2372i

>> y1+y2+y3 = sum

sum = 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)

>> double(ans)

ans = -0.5000 - 0.0000i = sum

>> y1*y2*y3 = product

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)

>> double(ans)

ans = -0.2500

$$\frac{10}{20}$$

5)

syms y x

>> y=3*exp(x)*sin(x),y1=diff(y),y2=diff(y,2),y4=diff(y,4)

y=3*exp(x)*sin(x)

y1=3*exp(x)*cos(x)+3*exp(x)*sin(x) ✓

y2=6*exp(x)*cos(x) ✓

y4=-12*exp(x)*sin(x) ✓

>> y4^2+y2^2+4*y^2

ans=36*exp(2*x)*cos(x)^2+180*exp(2*x)*sin(x)^2 ✓

>> simplify(ans)

ans=36*exp(2*x)*(4*sin(x)^2+1) ✓

$$\frac{25}{25}$$

