Kevin White

9/29/2021

208 9:00AM 10/11/2021

Yeying Chen 9:00AM 10/11/2021

Question 1

Part 2

```
x1=(sqrt(3)/2)+1, y1=sqrt(3)+(3/2)
```

```
x1 = 1.8660
y1 = 3.2321
```

```
m = -(x1*(x1^2 + y1^2 - 2*y1 - 2))/(x1^2 * y1 - x1^2 + y1^3 - 3*y1^2)
```

```
m = -1
```

Part 3

```
syms x y
eqn1 = x^4 + 2*x^2*y^2-4*x^2*y-4*x^2+y^4-4*y^3
```

eqn1 = $x^4 + 2\,x^2\,y^2 - 4\,x^2\,y - 4\,x^2 + y^4 - 4\,y^3$

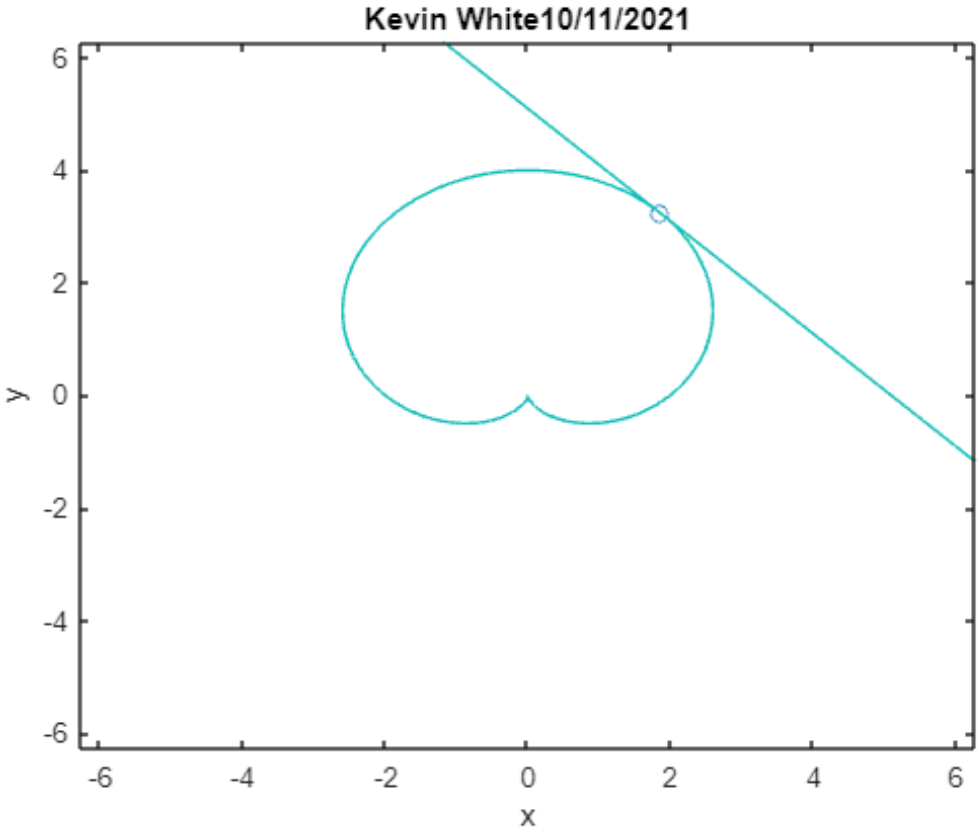
```
tanline1 = m*(x-x1)+y1-y
```

```
tanline1 =
```

$$\frac{22959694125757183}{4503599627370496} - y - x$$

Part 4

```
ezplot (eqn1)
hold on
scatter([x1],[y1])
ezplot(tanline1)
title (['Kevin White', '10/11/2021'])
hold off
```



Question 1

Part 2

```
x2=0, y2=0
```

```
x2 = 0
y2 = 0
```

```
m = -(cos(x2+y2))/(cos(x2+y2)-2*y2)
```

```
m = -1
```

Part 3

```
syms x y
eqn2 = sin(x+y)-y^2
```

```
eqn2 = sin(x + y) - y^2
```

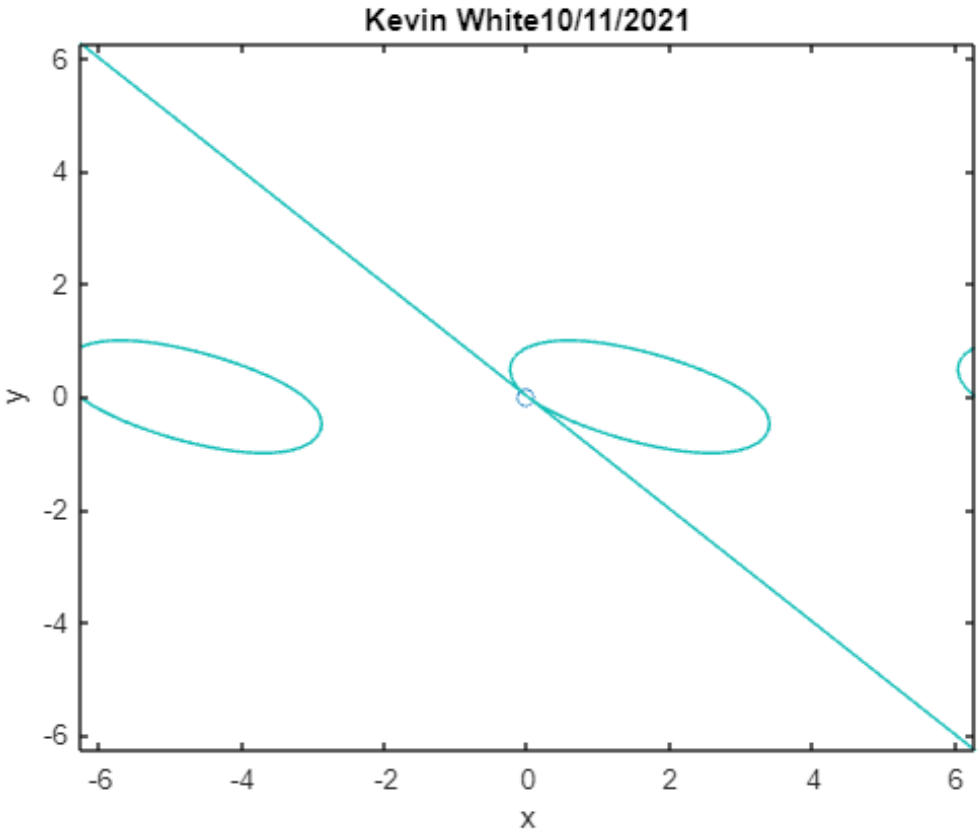
```
tanline2 = m*(x-x2)+y2-y
```

```
tanline2 = -x - y
```

Part 4

```
ezplot (eqn2)
```

```
hold on
scatter([x2],[y2])
ezplot(tanline2)
title (['Kevin White', '10/11/2021'])
hold off
```



Part 2

```
x3 = sqrt(3)/4, y3 = sqrt(3)/2
```

```
x3 = 0.4330
y3 = 0.8660
```

```
m = -x3/(y3*(2*y3^2-1))
```

```
m = -1.0000
```

Part 3

```
syms x y
eqn3 = y^2 - x^2 - y^4
```

eqn3 = $-x^2 - y^4 + y^2$

```
tanline3 = m*(x-x3)+y3-y
```

```
tanline3 =
```

$$\frac{3\sqrt{3}}{4} - y - x$$

Part 4

```
ezplot (eqn3)
hold on
scatter([x3],[y3])
ezplot(tanline3)
title (['Kevin White', '10/11/2021'])
hold off
```