

2.1

solve

$$3x - 7 < 5$$

How many roots?

$$x^2 + 4x - 2$$

Sketch

$$f(x + 2)$$

$$\text{where } f(x) = x^2$$

Expand & simplify

$$(\sqrt{3} + 3)(\sqrt{3} + 8)$$

Solve simultaneously

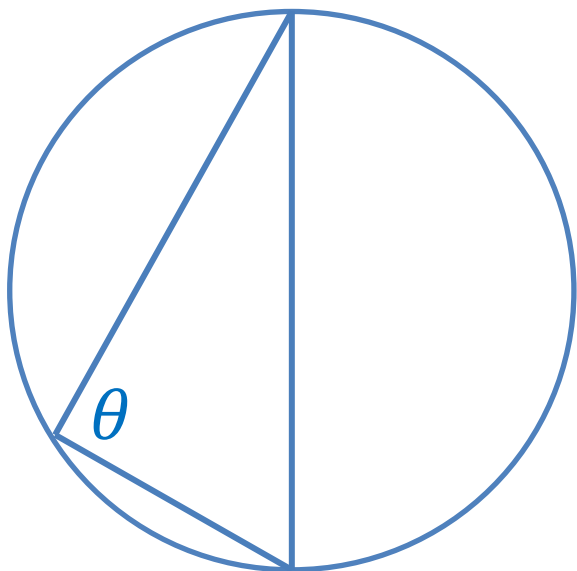
$$5p + 5q = 50$$

$$10p + 5q = 60$$

SIMPLIFY

$$\frac{3x^2 + 12x}{21x}$$

Find θ in terms of π



solve

$$x^2 + 3x + 2 = 0$$

Find the gradient of the line which joins the points (3, 7) and (9, 10)

2.2

solve

$$3x - 1 > 44$$

How many roots?

$$x^2 - 2x - 8$$

Expand & simplify

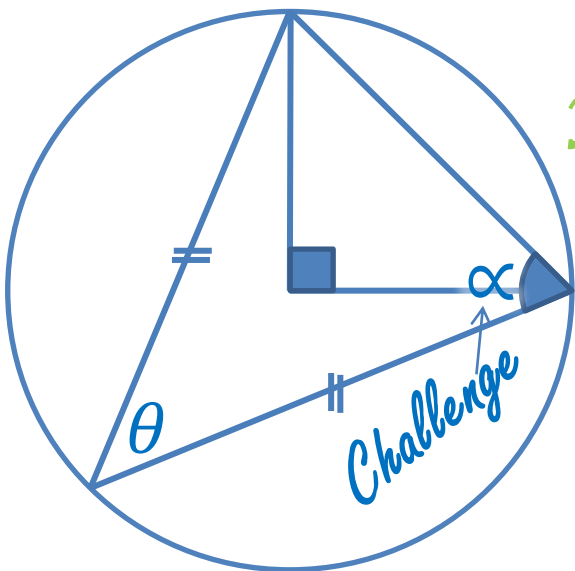
$$(\sqrt{3} + 4)(\sqrt{3} - 2)$$

Solve simultaneously

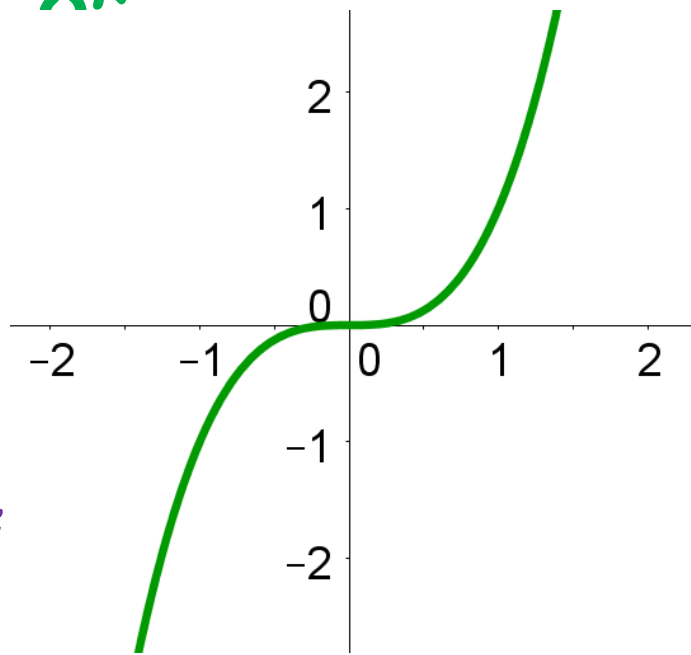
$$7d - 4c = 27$$

$$5c + 2d = -23$$

Find θ in terms of π



Sketch $f(x) + 2$



SIMPLIFY

$$\frac{12x - 3x^2}{15x + 9}$$

solve

$$x^2 - 6x - 27 = 0$$

Find the equation of the line with gradient 3 passing through $(5, -5)$

2.3

solve

$$10 - 4x > x - 2$$

How many roots?

$$x^2 - 4x + 4$$

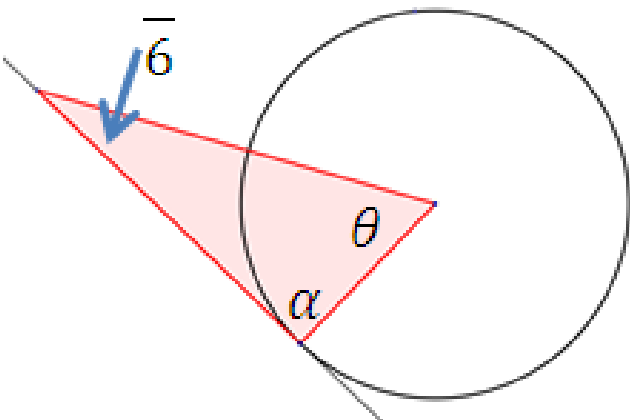
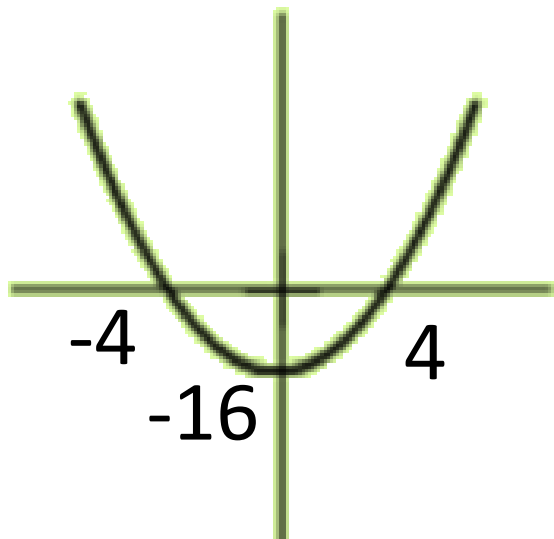
Expand & simplify

$$(4 + \sqrt{7})(4 - \sqrt{7})$$

Solve simultaneously

$$x^2 + y^2 = 37$$

$$y = x - 5$$

Find θ in terms of π $\frac{\pi}{6}$ Sketch $f(2x)$ **SIMPLIFY**

$$\frac{3x - 18}{x^2 - 2x - 24}$$

solve

$$x^2 + 6x + 14 = 9$$

Find the equation of the
line with gradient -3
passing through
 $(-1, -1)$

2.4

solve

$$x^2 - 64 \leq 0$$

How many roots?

$$x^2 - 4x + 8$$

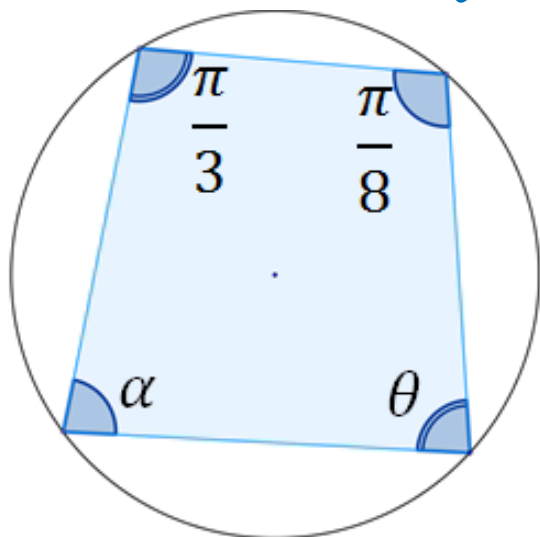
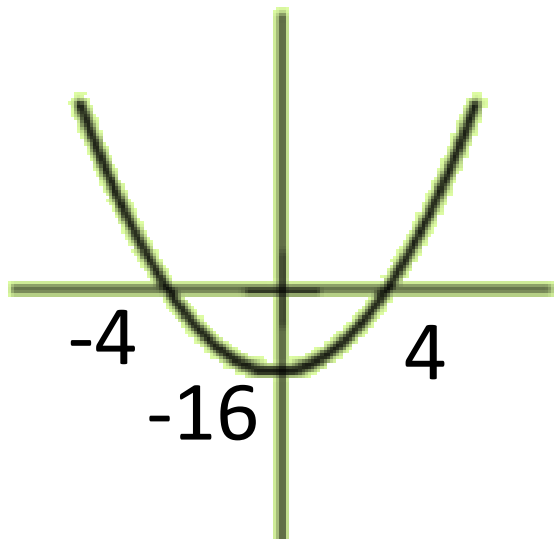
Expand & simplify

$$(2 + \sqrt{3})^2$$

Solve simultaneously

$$x^2 + y^2 = 180$$

$$3x + y = 30$$

Find θ in terms of π Sketch $f^2(x)$ **SIMPLIFY**

$$\frac{x^2 - 9}{x^2 + 9x + 18}$$

solve

$$4x^2 + 8x + 3 = 0$$

Find the equation of the line passing
through
(2, -4) and (7, 16)

2.5

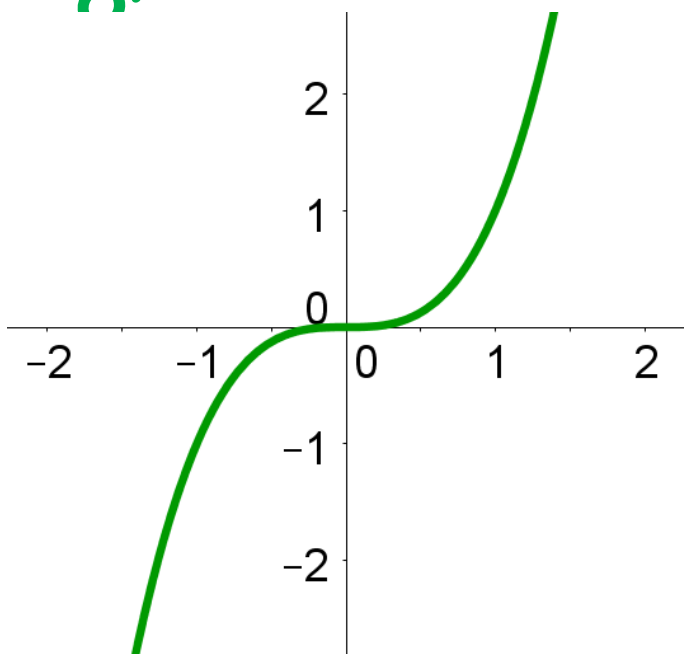
solve

$$x^2 + 7x + 6 > 0$$

How many roots?

$$x^2 - 5x + 4$$

Sketch $f(-x)$



Find x

$$2^{3x-2} = 16$$

Solve simultaneously

$$x^2 + y^2 = 65$$

$$2x + y = 15$$

SIMPLIFY

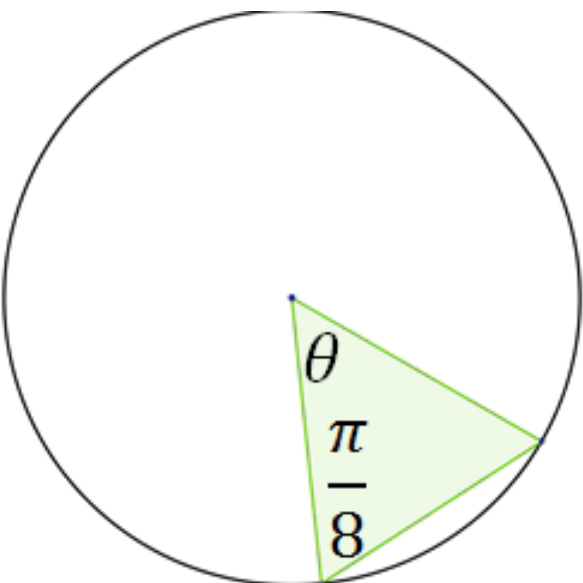
$$\frac{2x + 12}{x^2 + 11x + 30}$$

Find θ in terms of π

Solve

$$x^2 + 18x + 5 = 0$$

Find the equation of the line passing through $(-3, 10)$ and $(-1, 2)$



2.6

solve

$$12x - 27 - x^2 < 0$$

How many roots?

$$x^2 - 6x + 11$$

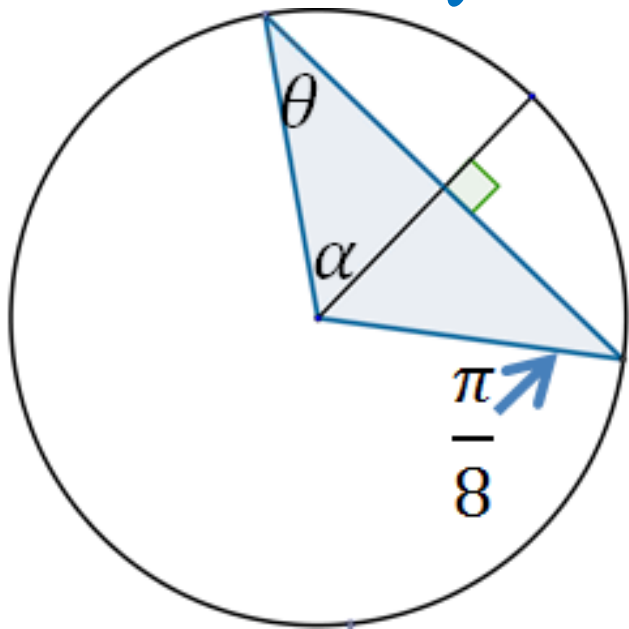
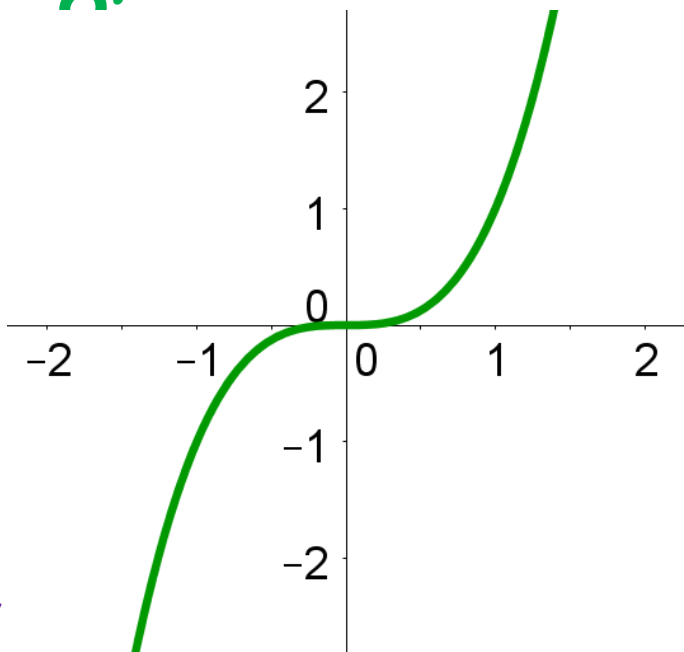
Find x

$$16^{3x+8} = 8^{7-2x}$$

Solve simultaneously

$$x^2 + 4y^2 = 100$$

$$x = 2y + 10$$

Find θ in terms of π Sketch $f^{-1}(x)$ **SIMPLIFY**

$$\frac{x^2 + 4x - 32}{x^2 - 6x + 8}$$

solve

$$x^2 - 9x = 1$$

Find the equation of the line parallel to

 $y = 11 - 2x$ that passes through $(2, 6)$

2.7 **solve**
 $x^2 + 2x < -1$

How many roots?

$$x^2 + 2x + 4$$

Find x

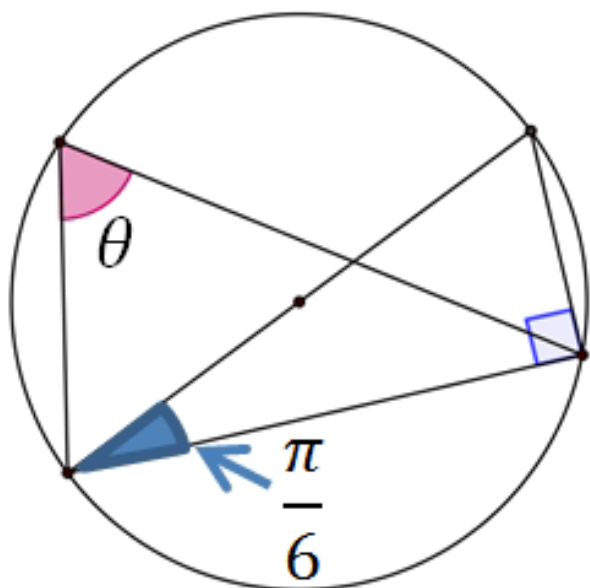
$$\left(\frac{1}{27}\right)^{3x} = 81^{4x-7}$$

Solve simultaneously

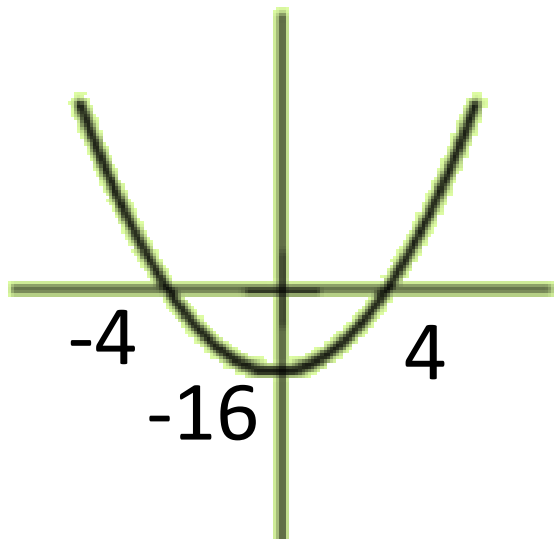
$$5x^2 + 2y = 57$$

$$4x + y = 18$$

Find θ in terms of π



Sketch $f(2x) + 1$



SIMPLIFY

$$\frac{x^2 - 16}{x^2 - 6x + 8}$$

solve

$$2x^2 + 16x = 7$$

Find the equation of the line perpendicular to $x + 2y + 15 = 0$ that passes through $(12, -4)$