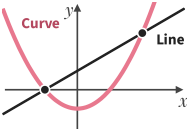


Simultaneous Equations: Linear and Quadratic

1

Solve

$$y = x^2 - 1$$

$$y = x + 1$$


put them equal, then = 0

$$x^2 - x - 2 = 0$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

2

Solve

$$y = x^2$$

$$y = 2x + 3$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

3

Solve

$$y = x^2 + 4x - 1$$

$$y = x + 3$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

4

Solve

$$y = x^2 - 3x + 5$$

$$y = 2x - 1$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

5

Solve

$$y = x^2 - 2x - 6$$

$$y = x - 2$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

6

Solve

$$y = x^2 - 2x + 1$$

$$y = 3x + 1$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

7

Solve

$$y = x^2 + 2x - 1$$

$$y = x + 5$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

8

Solve

$$x^2 + y^2 = 25$$

$$y = x + 1$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

Simultaneous Equations: Linear and Quadratic *further practice*

9

Solve

$$x^2 + y^2 = 20$$

$$y = x - 2$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

10

Solve

$$x + y = 7$$

$$y = x^2 + 1$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

11

Solve

$$xy = 6$$

$$y = x + 1$$

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

12

The line $y = x + k$ meets the curve $y = x^2$ at the point where $x = 3$. Find k and the coordinates of the other point where they meet.

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

13

A toy rocket's height after t seconds is $h = 6t - t^2$ metres. A drone's height is $h = t + 4$ metres. At what times are they at the same height?

put them equal, then = 0

$$$$

factorise

$$$$

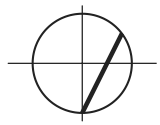
solve

$$x = \text{ or } $$

Answer _____

14

A circular pond has edge $x^2 + y^2 = 25$, in metres. A straight bridge across it follows the line $y = 2x - 5$. Find the length of the bridge in surd form.



put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

15

A rectangular tile has a diagonal of 10 cm and a perimeter of 28 cm. Find its length and width.

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____

16

Explain why the line $y = 2x$ and the curve $y = x^2 + 4$ never meet.

put them equal, then = 0

$$$$

factorise

$$$$

solve

$$x = \text{ or } $$

Answer _____