Mathematics

Solving quadratic equations graphically
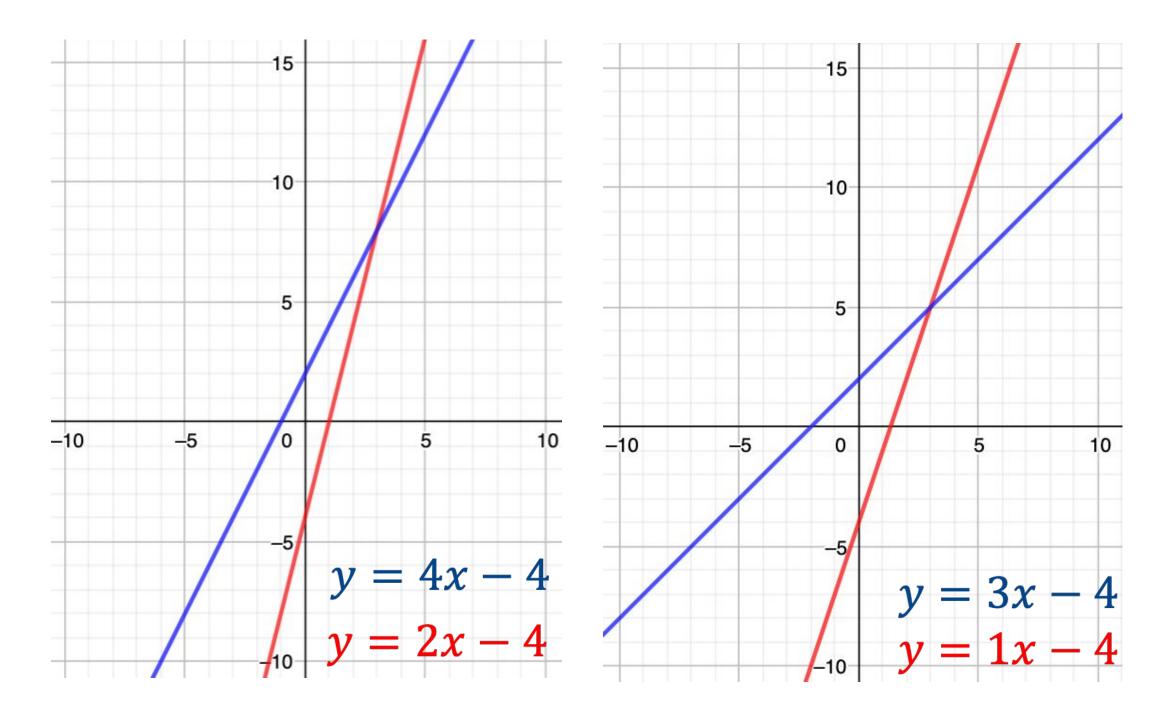
Mr Coward
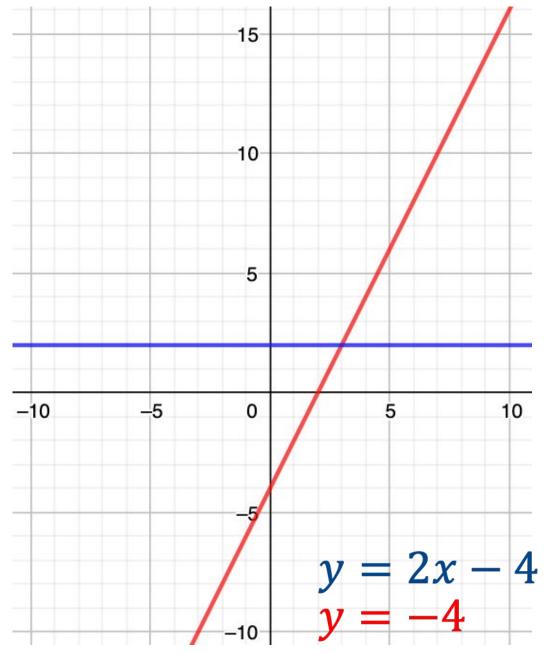
Try this

Solve the following simultaneous equations, what do you notice?

$$y = 4x - 4$$
$$y = 2x - 4$$

$$y = 3x - 4$$
$$y = 1x - 4$$

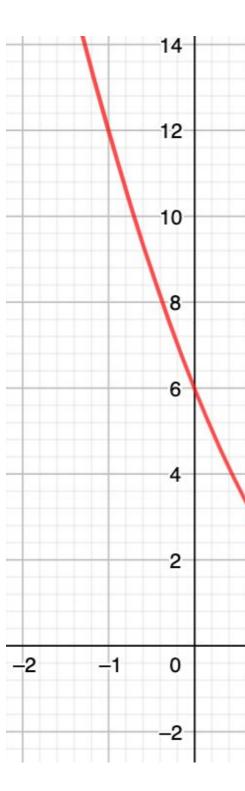$$y = 2x - 4$$
$$y = -4$$

Independent task

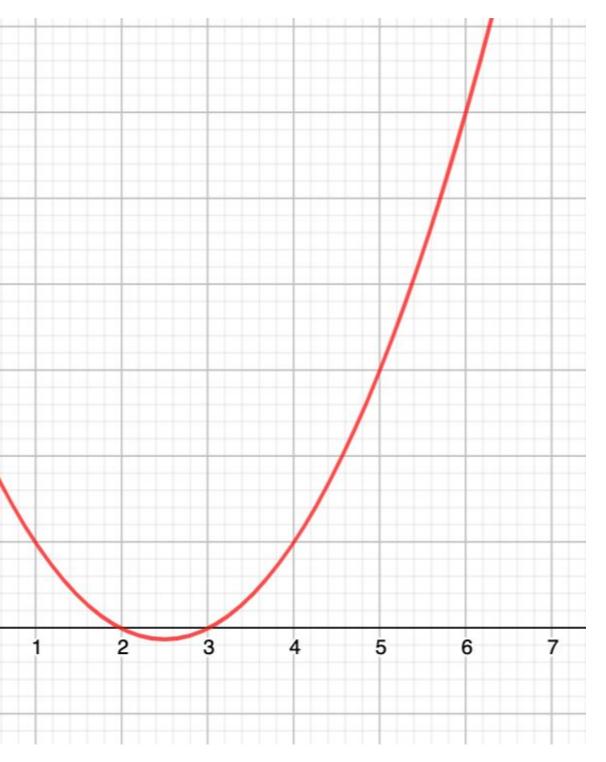1) Here is the graph $y = x^2 - 5x + 6$

Use it to solve:

$$x^2 - 5x + 6 = 0$$

$$x^2 - 5x + 8 = 2$$

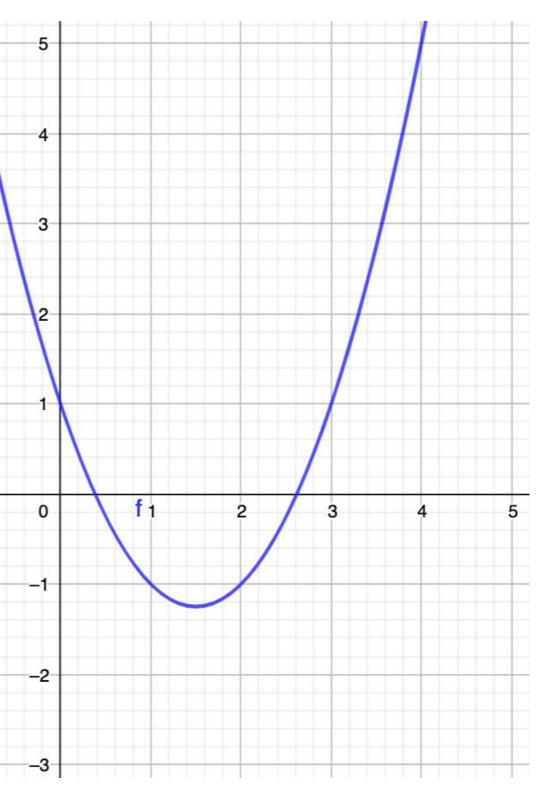$$x^2 - 4x + 2 = x + 2$$

Independent task

2) Here is the graph $y = x^2 - 3x + 1$

Use it to solve:

$$x^2 - 3x + 1 = 0$$

$$x^2 + 4x + 7 = 7x + 6$$
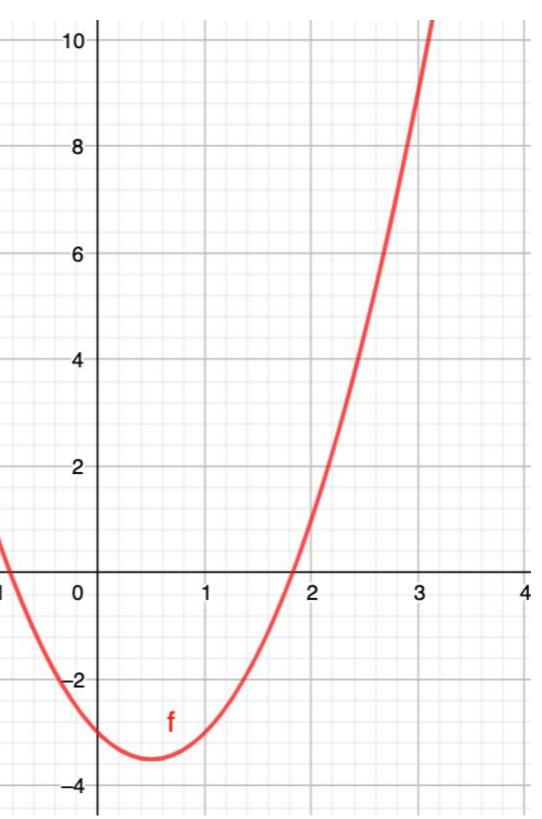
$$x^2 + 2x + 1 = 5x + 3$$

Independent task

3) Here is the graph $y = 2x^2 + 2x - 3$

Use it to solve:

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

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

$$6x^2 + 2x - 5 = 4x^2 + x - 2$$

Explore

The graph shows the curve

$$y = x^2 - 6x + 3$$

Create three equations that you can solve using this graph.

Make one easy, one medium and one difficult.