

# Solve a quadratic equation by factorising (Higher)

Maths

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# Solve a quadratic equation by factorising

1. Solve the each equation.

a)  $(2y + 5)(y + 3) = 0$

b)  $(w + 5)(2w - 3) = 0$

c)  $(m - 7)(3m - 1) = 0$

2. Factorise and solve each equation.

a)  $2x^2 + 7x + 3 = 0$

b)  $2x^2 + 5x + 3 = 0$

c)  $5x^2 + 43x - 18 = 0$

d)  $4x^2 + 12x + 9 = 0$

e)  $4x^2 - 25 = 0$

3. Which statement has the correct solution to solve  $5a^2 - 7a - 6 = 0$ ?

$$(5a + 3)(a - 2) = 0$$

$$a = \frac{3}{5} \text{ and } a = -2$$

$$(5a + 3)(a + 2) = 0$$

$$a = -\frac{3}{5} \text{ and } a = -2$$

$$(5a - 3)(a - 2) = 0$$

$$a = \frac{3}{5} \text{ and } a = 2$$

$$(5a + 3)(a - 2) = 0$$

$$a = -\frac{3}{5} \text{ and } a = 2$$

What mistakes have been made?



# Answers



# Solve a quadratic equation by factorising

1. Solve the each equation.

a)  $(2y + 5)(y + 3) = 0$   $y = -\frac{5}{2}$  and  $y = -3$

b)  $(w + 5)(2w - 3) = 0$   $w = \frac{3}{2}$  and  $w = -5$

c)  $(m - 7)(3m - 1) = 0$   $m = \frac{1}{3}$  and  $m = 7$

2. Factorise and solve each equation.

a)  $2x^2 + 7x + 3 = 0$   $x = -\frac{1}{2}$  and  $x = -3$

b)  $2x^2 + 5x + 3 = 0$   $x = -\frac{3}{2}$  and  $x = -1$

c)  $5x^2 + 43x - 18 = 0$   $x = \frac{2}{5}$  and  $x = -9$

d)  $4x^2 + 12x + 9 = 0$   $x = -\frac{3}{2}$

e)  $4x^2 - 25 = 0$   $x = \frac{5}{2}$  and  $x = -\frac{5}{2}$

3. Which statement has the correct solution to solve  $5a^2 - 7a - 6 = 0$ ?

$(5a + 3)(a - 2) = 0$   
 $a = \frac{3}{5}$  and  $a = -2$

$(5a + 3)(a + 2) = 0$   
 $a = -\frac{3}{5}$  and  $a = -2$

$(5a - 3)(a - 2) = 0$   
 $a = \frac{3}{5}$  and  $a = 2$

$(5a + 3)(a - 2) = 0$   
 $a = -\frac{3}{5}$  and  $a = 2$

What mistakes have been made?

Blue – Given positive value for a negative and a negative value for a positive

Pink – Factorised incorrectly

Orange – Factorised incorrectly

