Higher Maths Sample 1 P2 Q7

Factorise $x^2 - x - 20$, and hence solve $x^2 - x - 20 = 0$. [3]

Higher Maths Sample 2 P2 Q7a

(a) Factorise $x^2 - 4x - 21$, and hence solve $x^2 - 4x - 21 = 0$.

[3]

Higher Maths Nov 2017 P1 Q8

Factorise $x^2 - 7x - 18$, and hence solve $x^2 - 7x - 18 = 0$. [3]

Higher Maths June 2017 P2 Q8c

(c) Factorise $x^2 - 3x - 28$. [2]

Higher Maths Nov 2016 P2 Q9a

(a) Factorise $x^2 - 2x - 24$, and hence solve $x^2 - 2x - 24 = 0$. [3]

Higher Maths Nov 2017 P2 Q9b

(b) Use the quadratic formula to solve the equation $w^2 + 5w - 7 = 0$.
Give your answers correct to 2 decimal places. [3]

Higher Maths Sample 1 P2 Q10b

(b) Solve $3x^2 + 4x - 18 = 0$, giving your answers correct to two decimal places.
You must show all your working. [3]

Higher Maths Summer 2019 P2 Q12

(a) Factorise $81p^2 - 1$. [2]

(b) Factorise $7t^2 + 19t - 6$. [2]

Higher Maths Nov 2017 P1 Q12

Two different squares are constructed.
The side length of the smaller square is x cm.
The side length of the larger square is 3 cm longer than the side length of the smaller square.
The combined area of the two squares is 22·5 cm^2.

(a) Show that $4x^2 + 12x - 27 = 0$. [4]

(b) Find the dimensions of each of the squares.
Do **not** use a trial and improvement method.
You must show all your working and **justify** any decision that you make. [5]

Higher Maths Summer 2018 P2 Q12

Five quadratic equations are listed below.
Draw a line connecting each equation to its solution.
One has been completed for you. [4]

Equation	Solution
$x^2 - 4 = 0$	$x = 1, x = -\frac{3}{2}$
	$x = 2, x = -2$
	$x = 1, x = \frac{3}{2}$
$x(2x + 3) = 0$	$x = \frac{4}{9}$
	$x = -1, x = -\frac{2}{3}$
	$x = -\frac{2}{3}, x = \frac{2}{3}$
	$x = \frac{3}{2}, x = -\frac{3}{2}$
$(x - 1)(2x - 3) = 0$	$x = 1, x = -\frac{2}{3}$
	$x = -\frac{9}{4}$
	$x = 0, x = \frac{2}{3}$
$(2x - 3)(2x + 3) = 0$	$x = \frac{81}{16}$
	$x = 0, x = -\frac{3}{2}$
	$x = \frac{3}{2}$
$(4x + 9)^2 = 0$	$x = -\frac{9}{4}, x = 0$

Higher Maths Sample 2 P2_Q14

(a) Show that the equation $\frac{3}{2x-1} - \frac{5}{x+4} = 6$ can be written as $12x^2 + 49x - 41 = 0$. [4]

(b) Hence solve the equation $\frac{3}{2x-1} - \frac{5}{x+4} = 6$.

Give your answers correct to 2 decimal places. [3]

Higher Maths Summer 2018 P1 Q13

A ball is thrown upwards from a height of 1 m above the ground.

After t seconds, its height above the ground is h metres, where h is given by

$$h = 1 + 8t - 5t^2.$$

(a) Show that the time taken to reach a height of 4 metres satisfies the equation

$$5t^2 - 8t + 3 = 0.$$ [1]

(b) Solve the equation

$$5t^2 - 8t + 3 = 0.$$ [3]

(c) Interpret your answer to part *(b)* in the context of the question. [1]

Higher Maths June 2017 P1_Q16

The diagram shows two rectangles.

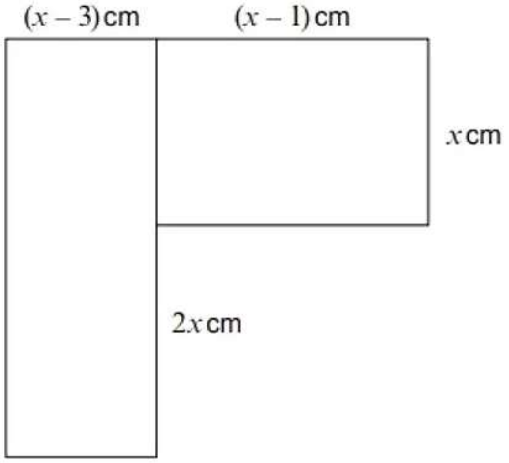

Diagram not drawn to scale

The combined area of both rectangles is 50 cm^2.

By considering the areas of the two rectangles, show that $2x^2 - 5x - 25 = 0$ and hence find the value of x. [6]

Higher Maths Nov 2016 P2_Q16

Use the quadratic formula to solve $(3x - 1)^2 = x(2x + 3) + 7$.
Give your answers correct to 2 decimal places. [6]

Higher Maths Summer 2018 P2 Q17

Solve the equation $(2x + 5)(3x - 11) = 7$.
Give your answers correct to 2 decimal places. [5]

Higher Maths Nov 2018 P2__Q18

Solve the equation $\frac{7x+1}{5x+2} = \frac{1}{x+3}$.

Give your answers correct to 2 decimal places.
You must show all your working. [6]

Higher Maths June 2017 P2_Q18

Solve the equation $x = \frac{7}{5x-3}$.

Give your answers correct to 2 decimal places. [5]

Higher Maths Summer 2019 P2 Q19

Use the quadratic formula to solve $(3x - 2)^2 = (x + 1)(x + 2)$.
Give your answers correct to 2 decimal places.
You must show all your working. [6]