

2021 LCOL Paper 1 – Question 3 (a)

Show that $x = 4$ is a solution of the equation $x^2 - 2x - 8 = 0$.

2021 LCOL Paper 1 – Question 3 (b)

The equation $x^2 + ax + b = 0$, where $a, b \in \mathbb{Z}$, has solutions $x = 5$ and $x = -2$.

Find the value of a and the value of b .

2021 LCOL Paper 1 – Question 3 (c)

Find the solutions of the equation $5x^2 - 2x - 9 = 0$ where $x \in \mathbb{R}$.

Give each answer correct to 2 decimal places.

2021 LCOL Paper 1 – Question 4 (a)

Solve the equation:

$$4(2x + 3) - 7 = 3(x - 5), \text{ where } x \in \mathbb{R}.$$

2021 LCOL Paper 1 – Question 4 (b)

Solve the simultaneous equations:

$$2x - y = 7$$

$$x^2 + y^2 = 49$$

2020 LCOL Paper 1 – Question 2 (a)

Solve the equation:

$$\frac{9x - 6}{2} = \frac{3x - 14}{3} + \frac{9x}{4}$$

2020 LCOL Paper 1 – Question 2 (b)

Solve the simultaneous equations:

$$3x - y = 4$$

$$4x^2 - 3xy = 4.$$

2020 LCOL Paper 1 – Question 4 (b)

Solve the equation

$$2^{9x-1} = 8^{2x}$$

2020 LCOL Paper 1 – Question 5 (a)

Solve the equation $x^2 - 3x - 4 = 0$.

2019 LCOL Paper 1 – Question 4 (b)

Solve the simultaneous equations:

$$x - 5y = -13$$

$$x^2 + y^2 = 13$$

2019 LCOL Paper 1 – Question 6 (a)

Solve the following inequality for $x \in \mathbb{R}$ and show your solution on the numberline below:

$$2(3 - x) < 8.$$

2019 LCOL Paper 1 – Question 6 (b)

Solve for x :

$$2^{2x-1} = 64.$$

2018 LCOL Paper 1 – Question 3 (a)

Solve the equation $2x^2 - 7x - 3 = 0$. Give each answer correct to 2 decimal places.

2018 LCOL Paper 1 – Question 3 (b)

Solve the simultaneous equations below to find the value of a and the value of b .

$$2a + 3b = 15$$

$$5a + b = -8$$

2018 LCOL Paper 1 – Question 6 (a)

Solve for x .

$$(x + 5)(3x - 4) - 3(x^2 + 2) + 4 = 0$$

2018 LCOL Paper 1 – Question 6 (b)

Find the solutions of

$$\frac{5}{x+3} - \frac{1}{x} = \frac{1}{2}$$

where $x \neq -3, 0, x \in \mathbb{R}$.

2017 LCOL Paper 1 – Question 3 (b)

Find the two values of x for which $3x^2 - 6x - 8 = 0$.

Give each answer correct to 1 decimal place.

2017 LCOL Paper 1 – Question 4 (a)

Solve for x :

$$11x - 5(2x - 1) = 3(6 - x) + 3.$$

2017 LCOL Paper 1 – Question 4 (b)

Solve the simultaneous equations:

$$y + 5 = 2x$$

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

2016 LCOL Paper 1 – Question 3 (a)

Solve for $3(x - 7) + 5(x - 4) = 15$, where $x \in \mathbb{R}$.

2016 LCOL Paper 1 – Question 3 (b)

Solve the equations below to find the value of a and the value of b :

$$4a + 3b = -3$$

$$5a = 25 + 2b$$

2016 LCOL Paper 1 – Question 3 (c)

List all the values of x that satisfy the inequality $2(2x - 3) + 6x < 25$, where $x \in \mathbb{N}$.

$$5a = 25 + 2b$$

2015 LCOL Paper 1 – Question 3 (a)

Simplify $3(4 - 5x) - 2(5 - 6x)$.

2015 LCOL Paper 1 – Question 3 (b)

List all the values of x that satisfy the inequality $2 - 3x \geq -6$, $x \in \mathbb{N}$.

2015 LCOL Paper 1 – Question 3 (c)

$g(x)$ is a function and $(2 - 3x) \times g(x) = 15x^2 - 22x + 8$, for all $x \in \mathbb{R}$.

Find $g(x)$.

2015 LCOL Paper 1 – Question 4 (a)

Solve the equation $-x^2 + 6x - 4 = 0$.

Give each solution correct to one decimal place.

2014 LCOL Paper 1 – Question 3 (a)

(i) Solve for x :

$$2(4 - 3x) + 12 = 7x - 5(2x - 7)$$

(ii) Verify your answer to (i) above.

2014 LCOL Paper 1 – Question 3 (b)

Solve the simultaneous equations:

$$x + y = 7$$

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

2014 LCOL Paper 1 – Question 4 (a)

Solve the equation

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

2014 LCOL Sample Paper 1 (c)

Show that $\frac{(a\sqrt{a})^3}{a^4}$ simplifies to \sqrt{a} .

2014 LCOL Sample Paper 1 (d)

Solve the equation $49^x = 7^{2+x}$ and verify your answer.

2014 LCOL Sample Paper 4 (a)

Solve the equation $x^2 - 6x - 23 = 0$, giving your answer in the form $a \pm b\sqrt{2}$, where $a, b \in \mathbb{Z}$.

2014 LCOL Sample Paper 4 (b)

Solve the simultaneous equations

$$2r - s = 10$$

$$rs - s^2 = 12$$

2013 LCOL Paper 3 (c)

Solve the equation $27^{2x} = 3^{x+10}$.

2012 LCOL Paper 2 (c)

Verify that $3 + \sqrt{2}$ is a root (solution) of the equation $x^2 - 6x + 7 = 0$.

2012 LCOL Paper 4 (a)

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

2012 LCOL Paper 4 (b)

Solve the equation $\frac{2}{3x-4} - \frac{1}{2x+1} = \frac{1}{2}$ and give your answers correct to one decimal place.

2011 LCOL Paper 4 (a)

Solve the simultaneous equations:

$$2f + \frac{2}{3}g + 1 = 0$$

$$f + \frac{1}{2}g + 1 = 0.$$

2011 LCOL Paper 4 (b)

Solve the following inequality, and show the solution set on the number line below.

$$5 - \frac{3}{4}x \leq \frac{19}{8}$$