



eClassroom

GCSE Mathematics

Linear Equations

Questions

Pearson Edexcel GCSE & iGCSE Mathematics



Section A — Foundation

Worked Examples

[Fluency]

Solve: $2x + 3 = 11$

$$2x = 8 \Rightarrow x = 4$$

[Reasoning]

Solve: $5x - 3 = 3x + 7$

$$2x = 10 \Rightarrow x = 5$$

[Problem Solving]

Solve: $2(3x - 1) = 4(x + 3)$

$$6x - 2 = 4x + 12 \Rightarrow 2x = 14 \Rightarrow x = 7$$

[Fluency]

1. Solve: $x + 5 = 12$

(1 mark)

[Fluency]

2. Solve: $3x = 21$

(1 mark)

[Fluency]

3. Solve: $2x + 3 = 11$

(2 marks)

[Fluency]

4. Solve: $5x - 3 = 3x + 7$

(2 marks)

[Fluency]

5. Solve: $3(x + 4) = 24$

(2 marks)

[Reasoning]

6.

A rectangle has perimeter 36 cm. Its length is $(2x + 1)$ cm and its width is x cm.
Form and solve an equation to find x .

(3 marks)



**[Reasoning]**

7.

Solve: $2(3x - 1) = 4(x + 3)$

(3 marks)**[Reasoning]**

8.

The angles in a triangle are $(3x + 10)^\circ$, $(2x + 5)^\circ$ and $(x + 15)^\circ$.Form and solve an equation to find x .

Hence find the size of each angle.

(4 marks)**[Problem Solving]**

9.

Five consecutive integers sum to 100.

Let the smallest integer be n .

Form and solve an equation to find the five integers.

(4 marks)**[Problem Solving]**

10.

Two friends share some money. Anna gets $\pounds(3x - 5)$ and Ben gets $\pounds(2x + 8)$.

Anna gets twice as much as Ben.

Find how much each person receives.

(4 marks)

**Section B — Higher****Worked Examples****[Fluency]**

Solve: $(x + 3)/4 = 5$

$$x + 3 = 20 \Rightarrow x = \mathbf{17}$$

[Reasoning]

Solve: $(2x - 1)/3 = (x + 4)/5$

$$5(2x - 1) = 3(x + 4) \Rightarrow 10x - 5 = 3x + 12 \Rightarrow 7x = 17 \Rightarrow x = \frac{17}{7}$$

[Problem Solving]

Solve: $3/(x+1) = 2/(x-1)$

$$3(x - 1) = 2(x + 1) \Rightarrow 3x - 3 = 2x + 2 \Rightarrow x = 5$$

[Fluency]

1.

Solve: $\frac{x+3}{4} = 5$

(2 marks)

[Fluency]

2.

Solve: $\frac{2x-1}{3} = \frac{x+4}{5}$

(3 marks)

[Fluency]

3.

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

(3 marks)

[Reasoning]

4.

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

(4 marks)



**[Reasoning]****5.**

The angles on a straight line include $(3x + 10)^\circ$ and $(2x - 5)^\circ$ and a right angle.
Form and solve an equation to find x .

(3 marks)**[Reasoning]****6.**

A class raises money for charity. Class A raises $\pounds x$. Class B raises $\pounds(2x - 15)$.
Class C raises $\pounds(x + 25)$.
The total raised is $\pounds 210$.
Find how much each class raised.

(4 marks)**[Reasoning]****7.**

Solve: $\frac{x+2}{x-3} = 4$

(3 marks)**[Problem Solving]****8.**

A train journey takes t hours. The outward journey is 120 km at $(t + 1)$ km/h.
The return is 120 km at t km/h. The total time is 5 hours.
Form and solve an equation to find t .

(5 marks)**[Problem Solving]****9.**

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

(5 marks)**[Problem Solving]****10.**

n is a positive integer. Explain why $2n + 1$ is always odd.
Two odd numbers are $2n + 1$ and $2n + 3$.
Their sum is 52. Find n .

(4 marks)