Linear Equations questions and answers

9 questions · 8 Core, 1 Extended · 7 non-calculator · worked answers

Name _____ Date _____ Score _____

- Original questions in the style of the Cambridge 0580 papers, each labelled Core or Extended and calculator or non-calculator. Try every question before you look at the answers.
- Worked answers start after the questions. Questions with marks come from our 0580 practice bank (M method, A accuracy, B independent marks).
- Online, with more practice: igcsemathrevision.com/igcse-frontend/0580/linear-equations-questions

Core: for everyone (Papers 1 and 3, and Extended Papers 2 and 4)

1. **Core · non-calculator · easy**

Solve the equation $6x + 11 = 47$.

2. **Core · non-calculator · easy**

Solve the equation $4(3x - 2) = 40$.

3. **Core · non-calculator · medium**

Solve $7x - 4 = 3x + 10$.

4. **Core · non-calculator · medium**

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

5. **Core · calculator · medium · 2 marks**

Solve $\dfrac{2x - 3}{4} = 5$.

6. **Core · calculator · medium · 3 marks**

The angles of a triangle are $x°$, $2x°$ and $(x + 20)°$. Write an equation in x and solve it.

7. **Core · non-calculator · hard**

The angles of a triangle are $(x + 10)^\circ$, $(2x - 5)^\circ$ and $(3x + 25)^\circ$.
Form and solve an equation to find x. Then find the largest angle.

8. Core · non-calculator · hard

A rectangle has length $(3x - 2)$ cm and width $(x + 4)$ cm. Its perimeter is 52 cm.
Find the area of the rectangle.

Extended: for Papers 2 and 4

9. Extended · non-calculator · medium

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

Answers and worked solutions

Question 1

Answer: $x = 6$

1. Subtract 11: $6x = 36$.
2. Divide by 6: $x = 6$.

Question 2

Answer: $x = 4$

1. Expand: $12x - 8 = 40$.
2. $12x = 48$, so $x = 4$.

Question 3

Answer: $x = 3.5$

1. Subtract $3x$: $4x - 4 = 10$.
2. $4x = 14$, so $x = 3.5$.

Question 4

Answer: $x = 4$

1. Multiply by 3: $x + 5 = 6x - 15$.
2. $20 = 5x$, so $x = 4$.

Question 5 — 2 marks

Answer: $x = 11.5$

M1 $2x - 3 = 20$

A1 11.5 oe

Question 6 — 3 marks

Answer: $4x + 20 = 180$, $x = 40$

M1 $x + 2x + x + 20 = 180$

M1 $4x = 160$

A1 40

Question 7

Answer: $x = 25$, largest angle 100°

1. Angles in a triangle add to 180°: $x + 10 + 2x - 5 + 3x + 25 = 180$.
2. $6x + 30 = 180$, so $x = 25$.
3. Largest angle: $3 \times 25 + 25 = 100^\circ$.

Question 8

Answer: $160\ \text{cm}^2$

1. $2(3x - 2) + 2(x + 4) = 52$, so $8x + 4 = 52$ and $x = 6$.
2. Length 16 cm, width 10 cm.
3. Area $= 16 \times 10 = 160\ \text{cm}^2$.

Question 9

Answer: $x = 4.4$

1. Multiply every term by 12: $4(2x - 1) - 3(x + 2) = 12$.
2. $8x - 4 - 3x - 6 = 12$, so $5x = 22$.
3. $x = 4.4$

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