

Solving Equations

GCSE Maths · Practice Questions

20 questions · 62 marks total

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Section A · Foundation

Questions 1–3 are the most straightforward; they get harder as you go on. Question 10 is the most challenging.

1

[1 mark]

Solve $x + 7 = 12$

.....

2

[2 marks]

Solve

(a) $3x = 21$

(b) $\frac{x}{4} = 5$

.....

3

[2 marks]

Solve $2x + 5 = 17$

.....

4

[2 marks]

Solve $5x - 3 = 22$

.....

5

[3 marks]

Solve $4x + 1 = 2x + 11$

.....

6

[3 marks]

Solve $3(x + 4) = 27$

7

[3 marks]

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

8

[3 marks]

Solve $7 - 2x = 1$

9

[4 marks]

The three angles of a triangle are x° , $2x^\circ$ and $(3x + 30)^\circ$.

(a) Form an equation in x and solve it.

(b) Work out the size of each angle.

10

[4 marks]

A rectangle has length $(3x - 1)$ cm and width $(x + 2)$ cm.

The perimeter is 42 cm.

(a) Find the value of x .

(b) Work out the area of the rectangle.

Higher-tier style. Again, questions 1–3 are the gentlest and question 10 is the hardest.

1 [2 marks]

Solve $5x + 2 = 3x + 14$

.....

2 [2 marks]

Solve $2(3x - 1) = 4x + 8$

.....

3 [3 marks]

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

.....

4 [3 marks]

Solve $\frac{x}{2} + \frac{x}{3} = 10$

.....

5 [4 marks]

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

.....

6 [4 marks]

Make l the subject of the formula

$$T = 2\pi\sqrt{\left(\frac{l}{g}\right)}$$

.....

7

[4 marks]

- (a) Show that the equation $x^2 - x - 5 = 0$ can be rearranged to give $x = \sqrt{5 + x}$
- (b) Starting with $x_0 = 2$, use the iteration $x_{n+1} = \sqrt{5 + x_n}$ three times. Give each value to 4 decimal places.
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8

[4 marks]

Solve $\frac{x+2}{4} - \frac{x-3}{6} = 1$

9

[4 marks]

The three angles of a triangle are $(2x + 10)^\circ$, $(3x - 20)^\circ$ and $(x + 40)^\circ$.

- (a) Show that $6x + 30 = 180$
- (b) Work out the size of the largest angle.
-

10

[5 marks]

(a) Solve $\frac{2x+3}{3} + \frac{x-1}{2} = 4$

- (b) When 5 is added to a number and the result is doubled, the answer is the same as multiplying the number by 3 and then subtracting 1. Find the number.
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