WORKSHEETFORGE ANSWER KEY

GCSE Mathematics — Foundation Tier

Mixed practice paper · Calculator allowed · 15 questions · 33 marks · seed 42

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1. **Simplifying fractions** — **2 marks**

Write 10/12 in its simplest form.

Answer: $\frac{5}{6}$

M1	Divide the numerator and denominator by 2
A1	$\frac{5}{6}$

2. **Powers & roots** — **1 mark**

Work out √121.

Answer: 11

B1	11

3. **Adding & subtracting fractions** — **2 marks**

Work out 1/3 + 2/7. Give your answer as a fraction in its simplest form.

Answer: $\frac{13}{21}$

M1	Write both fractions over a common denominator: 13/21
A1	$\frac{13}{21}$

4. **Matchstick patterns** — **3 marks**

A pattern of squares is made from matchsticks. Figure 1 uses 4 matchsticks, Figure 2 uses 7 and Figure 3 uses 10.
(a) How many matchsticks are used in Figure 9?
(b) Write an expression, in terms of *n*, for the number of matchsticks in Figure *n*.

Figure 1 Figure 2 Figure 3

Answer: (a) 28 (b) 3n + 1

M1	Each new square adds 3 matchsticks, starting from 4
A1	(a) 28
B1	(b) 3n + 1

5. **Mixed numbers** **2 marks**

Write 2 1/6 as an improper fraction.

> **Answer:** $\frac{13}{6}$

M1	$2 \times 6 + 1 = 13$
A1	$\frac{13}{6}$

6. **Rounding & estimation** **3 marks**

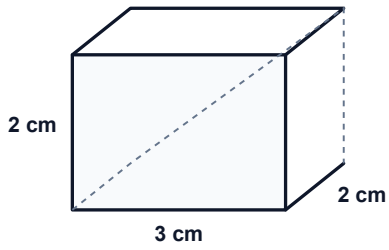
Work out an estimate for the value of $(7.2 \times 79.6) \div 1.07$.

> **Answer:** 560

M1	Round each number to 1 significant figure: 7, 80, 1
M1	Estimate = $(7 \times 80) \div 1$
A1	560

7. **Volume of a cuboid** **2 marks**

A cuboid has a length of 3 cm, a width of 2 cm and a height of 2 cm. Work out its volume.



> **Answer:** 12 cm^3

M1	Volume = length × width × height = 3 × 2 × 2
A1	12 cm^3

8. **Comparing fractions** **2 marks**

Which is larger, 4/5 or 1/6? You must show your working.

> **Answer:** $\frac{4}{5}$

M1	Use a common denominator or cross-multiply: $4 \times 6 = 24$ and $1 \times 5 = 5$
A1	$\frac{4}{5}$

9. **Best buys** **3 marks**

Shop A sells 3 litres of orange juice for £4.80. Shop B sells 1.5 litres of orange juice for £1.50. Which shop is better value for money? Give a reason for your answer.

> **Answer:** Shop B — £1.00 per litre is cheaper than £1.60 per litre

M1	Find both unit prices: £4.80 ÷ 3 and £1.50 ÷ 1.5
A1	Shop A = £1.60 per litre, Shop B = £1.00 per litre
A1	Shop B — cheaper per litre

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10. **Fractions of an amount** **2 marks**

Work out 4/5 of 500 ml.

> **Answer:** 400 ml

M1	One part = 500 ml ÷ 5 = 100 ml
A1	400 ml

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11. **Metric units** **1 mark**

Change 49 hours into minutes.

> **Answer:** 2940 minutes

B1	2940 minutes

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12. **Fractions, decimals & percentages** **2 marks**

Write 4/5 as a percentage.

> **Answer:** 80%

M1	Equivalent fraction over 100: 80/100
A1	80%

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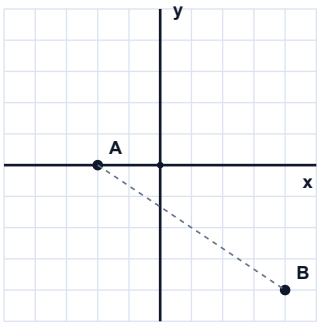
13. **Midpoints** **2 marks**

A is the point (−2, 0) and B is the point (4, −4). Work out the coordinates of the midpoint of AB.



Answer: (1, −2)

M1	Add the x-coordinates and the y-coordinates, then divide each total by 2
A1	(1, −2)

14. **Area on a grid** **3 marks**

The shape is drawn on a square grid. Each small square is 1 cm by 1 cm. Work out the area of the shape.

Answer: 12 cm²

M1	Cut a triangle off one end and move it to the other end to make a rectangle
M1	Count whole squares and half squares, or calculate from the rectangle
A1	12 cm²

15. **Averages & range** **3 marks**

Here are eight numbers:

8, 14, 6, 8, 8, 13, 4, 11

(a) Work out the mean.

(b) Work out the range.

Answer: (a) 9 (b) 10

M1	(a) Add all eight numbers and divide by 8
A1	(a) 9
B1	(b) 10