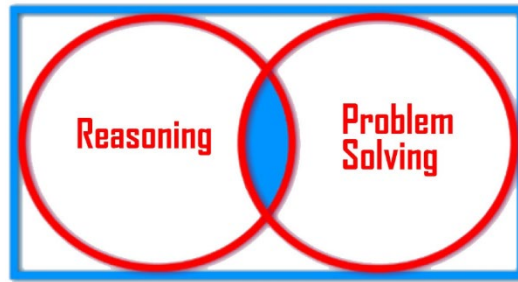


GCSE Foundation (5 – 1)



fluidmaths.co.uk

Mathematical Reasoning Questions

(Ratio) – Set 1

Solutions

The questions are repeated here for your convenience

| | |
|-----------------|--|
| <p>1</p> | <p>Shannon say's, 'If £120 is shared in the ratio 5:7 it will be the same as £70:£50'</p> <p>Comment on the accuracy of Shannon's statement</p> <p><u>Solution</u></p> <p>Shannon's statement is inaccurate because 70:50 simplifies to 7:5 not 5:7. Therefore it is not an equivalent ratio to 5:7 [1mark]</p> |
| <p>2</p> | <p>Simplify the ratio 1hour 15minutes : 35minute</p> <p>Make your choice</p> <p>a) 2: 1 b) 7: 15 c) 15: 7 d) 1: 2</p> <p><u>Solution</u></p> <p>Convert 1 hour 15 minutes into minutes completely 1hour 15 minutes = 75 minutes $75 : 35 = 15 : 7$ [1mark]</p> |
| <p>3</p> | <p>Choose all the ratios which are equivalent to 20: 35</p> <p>a) 175: 100 b) 40: 70 c) 100: 175 d) 70: 40</p> <p><u>Solution</u></p> <p>Correct answers: B and C [1mark]</p> |
| <p>4</p> | <p>If $6: 11 = n: 1$ then n must be equal to</p> <p>a) $\frac{11}{6}$ b) $\frac{6}{17}$ c) $\frac{6}{11}$ d) $\frac{17}{6}$</p> <p><u>Solution</u></p> <p>Divide both sides by 11. Correct Answer: $\frac{6}{11}$ [1mark]</p> |

5 The ratio of Boys to Girls in a class is 7:5.
What fraction of the class are girls?

- a) $\frac{5}{7}$
- b) $\frac{7}{5}$
- c) $\frac{5}{12}$
- d) $\frac{7}{12}$

Solution

Denominator of the fraction will be $7 + 5 = 12$

Correct Answer: C [1mark]

6 The ratio of A to B is 3: 0.8 what fraction of A is B
Choose one answer

- a) $\frac{3}{8}$
- b) $\frac{4}{15}$
- c) $\frac{8}{3}$
- d) $\frac{15}{4}$

Solution

$$\frac{A}{B} = \frac{3}{0.8} = \frac{30}{8}$$

$$B = \frac{8}{30}A \text{ that is } B = \frac{4}{15}A$$

Correct Answer: B [1mark]

7 Divide £630 into the ratio 7:3

Lilly's Answer:

$$\frac{3}{7} \times 630 = 210$$

$$630 - 210 = 420$$

$$\text{Check: } 420 + 210 = \text{£}630$$

Lilly is wrong. Without using a different method, modify Lilly's method to find the right answer.

Solution

$$\frac{3}{10} \times 630 = 3 \times 63 = 189$$

$$630 - 189 = 441$$

Therefore we have £441: £189

[1mark]

8 Given that $5n:8 = 3:1$

Find the value of n

a) $\frac{5}{8}$

b) $\frac{1}{3}$

c) $4\frac{4}{5}$

d) $1\frac{3}{5}$

Solution

$$1 \times 8 = 8$$

$$\text{Therefore, } 3 \times 8 = 5n$$

$$\text{That is, } 5n = 24$$

$$n = \frac{24}{5} = 4\frac{4}{5}$$

[1mark]

9 Joanna, Laila and Lacey have £84 to share. The ratio of Joanna's share to the combined share of Laila and Lacey is 1:5
Laila received £10 more than Lacey. How much did Lacey get?
Choose one answer

- a) £30
- b) £40
- c) £16
- d) £14

Solution

Combined share of $\frac{5}{6} \times 84 = 70$

Now we need to share 70 so that Laila receives £10 more

That £40 : £30. So Lacey got £30 **[2marks]**

10 Given that $a : b = 1 : 7$
Choose the equation(s) which connects a and b

- a) $a = \frac{7}{b}$
- b) $b = 7a$
- c) $a = \frac{1}{7}b$
- d) $b = \frac{1}{7}a$

Solution

Change the ratio to a proportional equation

That is, $\frac{a}{b} = \frac{1}{7}$

$$a = \frac{1}{7}b$$

Also $b = 7a$

Correct Answers: B and D **[2marks]**