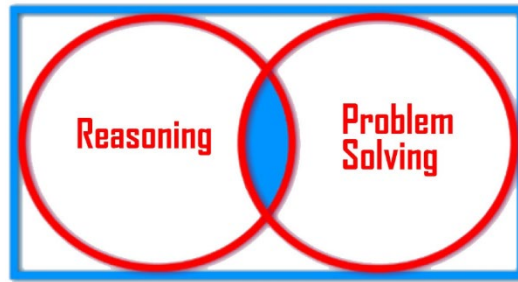


GCSE Foundation (5 – 1)



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Mathematical Reasoning Questions

(Fractions) – Set 1

**The marks shown are for guidance purposes only
[Total marks: 30 Marks]**

- 1 By representing the following diagrams as fractions, work out the total of the fractions shown in the diagrams below



Show all your workings clearly.

Give your answer as a mixed number

[2Marks]

- 2 Match your calculations in **Set A** to the correct answer in **Set B**

Set A	Set B
$\frac{1}{a} + \frac{1}{a}$	1
$\frac{a}{3} - \frac{b}{5}$	$\left(\frac{a}{b}\right)^2$
$\frac{a}{b} \div \frac{a}{b}$	$\frac{2}{a}$
$\frac{a}{b} \times \frac{a}{b}$	$\frac{5a - 3b}{15}$

[4Marks]

3 Here is a calculation: $\frac{3}{4}$ of $\square = \text{£}75$

Junior's Answer

$$75 \div 4 = 18.75$$

$$18.75 \times 3 = 56.25$$

Therefore, $\square = \text{£}56.25$

Explain why Junior's answer is inaccurate and give the correct answer.

[2Marks]

4 Choose the correct answer for the calculation $\frac{b}{a} + \frac{a}{b}$

a) $\frac{2ab}{ab}$

b) $\frac{a+b}{ab}$

c) $\frac{a^2+b^2}{ab}$

d) $\frac{a^2b^2}{ab}$

[1Mark]

5 Katie is told to add $\frac{2}{3}$ and $\frac{4}{5}$ together.

John is told to find the difference between the two fractions

Katie's Answer

$$\begin{aligned} & \frac{2}{3} + \frac{4}{5} \\ &= \frac{2}{15} + \frac{4}{15} \\ &= \frac{6}{15} \end{aligned}$$

John's Answer

$$\begin{aligned} & \frac{2}{3} - \frac{4}{5} \\ &= \frac{-2}{-2} \\ &= 1 \end{aligned}$$

Both Katie and John are wrong.

Identify their mistakes and carry out the correct calculations

[4Marks]

6 Find the number which lie half-way between $-1\frac{5}{7}$ and 3

[4Marks]

7 Answer **True** or **False** to the following statements

a) $\frac{1}{2} + \frac{1}{7} = \frac{2}{9}$

b) $\frac{1}{3} - \frac{1}{2} = \frac{1}{6}$

c) $\frac{1}{5} \times \frac{5}{7} \times \frac{4}{2} = \frac{2}{7}$

d) $\frac{3}{4} \div \frac{1}{20} = 15$

[4Marks]

8	<p>For each question you answered as False in Question 7, show the correct calculations</p> <p style="text-align: right;">[2Marks]</p>
9	<p>Here is a calculation:</p> $\frac{2}{\square} - \frac{\square}{5} = \frac{7}{15}$ <p>Fill in the missing numbers to complete the calculation</p> <p style="text-align: right;">[2Marks]</p>
10	<p>If $x = 1\frac{2}{5}$ and $y = 1\frac{1}{4}$</p> <p>Use the signs $<$, $>$ or $=$ to make the following statements correct</p> <p>a) $x + 3 \square 2 + y$ [2Marks]</p> <p>b) $x \div 2 \square 4 \div y$ [3Marks]</p>