

GCSE QUESTIONS WITH CLUES

Q1. NON-CALCULATOR

Write the fraction $\frac{28}{70}$ in its simplest form.

$$\begin{aligned} & \frac{28 \div 2}{70 \div 2} \\ = & \frac{14 \div 7}{35 \div 7} \end{aligned}$$

.....
(Total for question = 1 mark)

Q2. NON-CALCULATOR

Here is a list of four fractions.

$$\frac{4}{16} \qquad \frac{2}{8} \qquad \frac{15}{60} \qquad \frac{3}{9}$$

One of these fractions is not equivalent to $\frac{1}{4}$

Write down this fraction.

.....
(Total for question = 1 mark)

Q3. NON-CALCULATOR

Work out $\frac{1}{4} \times 60$

$$\begin{aligned} & \frac{1}{4} \times 60 \\ = & 60 \div 4 \end{aligned}$$

$$4 \overline{) 60}$$

.....
(Total for question = 1 mark)

Q4. NON-CALCULATOR

There are 120 people at a party.

$\frac{1}{3}$ of the people leave the party. Work out the number of people still at the party.

$$\frac{1}{3} \times 120$$

$$3 \overline{) 120}$$

.....
(Total for question = 3 marks)

Q5. NON-CALCULATOR

Sam has £480

He spends $\frac{1}{4}$ of the £480. Work out how much money Sam has left.

$$\frac{1}{4} \times 480$$

$$4 \overline{) 480}$$

.....
(Total for Question is 3 marks)

Q6. NON-CALCULATOR

(a) Work out $\frac{2}{5} + \frac{1}{4}$

$$4 \times \frac{2}{5} + \frac{1}{4} \times 5$$

$$4 \times \frac{2}{5} + \frac{1}{4} \times 5$$

$$= \frac{8}{20} + \frac{5}{20}$$

.....
(Total for question = 2 marks)

Q7. NON-CALCULATOR

Work out $\frac{3}{8} + \frac{1}{2}$

$$\frac{3}{8} + \frac{1 \times 4}{2 \times 4}$$

$$= \frac{3}{8} + \frac{4}{8}$$

.....
(Total for Question is 2 marks)

Q8. NON-CALCULATOR

Work out $\frac{3}{8} + \frac{1}{3}$

$$3 \times \frac{3}{8} + \frac{1 \times 8}{3 \times 8}$$

$$= \frac{9}{24} + \frac{8}{24}$$

.....
(Total for Question is 2 marks)

Q9. NON-CALCULATOR

Work out $\frac{2}{5} + \frac{3}{8}$

Give your answer in its simplest form.

$$8 \times \frac{2}{5} + \frac{3 \times 5}{8 \times 5}$$

$$= \frac{16}{40} + \frac{15}{40}$$

.....
(Total for Question is 2 marks)

Q10. NON-CALCULATOR

Work out $\frac{1}{5} + \frac{3}{7}$

$$\frac{1 \times 7}{5 \times 7} + \frac{3 \times 5}{7 \times 5}$$

$$= \frac{7}{35} + \frac{15}{35}$$

.....
(Total for Question is 2 marks)

Q11. NON-CALCULATOR

Work out $\frac{1}{3} + \frac{5}{9}$

$$\frac{1 \times 3}{3 \times 3} + \frac{5}{9}$$

$$= \frac{4}{9} + \frac{5}{9}$$

.....
(Total for question = 2 marks)

Q12. NON-CALCULATOR

Work out $3\frac{4}{5} + \frac{3}{7}$

$$3\frac{4}{5} = \frac{19}{5}$$

$$\begin{array}{r} 19 \\ \times 7 \\ \hline 133 \end{array}$$

Give your answer as a mixed number in its simplest form.

$$\frac{7 \times 19}{7 \times 5} + \frac{3 \times 5}{7 \times 5}$$

$$=$$

.....
(Total for question = 3 marks)

Q13. NON-CALCULATOR

Work out $1\frac{3}{4} \times 1\frac{1}{3}$

Give your answer as a mixed number.

$$1\frac{3}{4} \times 1\frac{1}{3}$$

$$= \frac{7}{4} \times \frac{4}{3}$$

$$=$$

.....
(Total for question = 3 marks)

Q14. NON-CALCULATOR

Work out $3\frac{1}{2} \times 1\frac{3}{5}$

Give your answer as a mixed number in its simplest form.

$$3\frac{1}{2} \times 1\frac{3}{5}$$

$$= \frac{7}{2} \times \frac{8}{5}$$

$$=$$

.....
(Total for question = 3 marks)

Q15. NON-CALCULATOR

Here are some fractions.

$$\frac{9}{12} \quad \frac{6}{8} \quad \frac{18}{24} \quad \frac{10}{16} \quad \frac{15}{20}$$

One of these fractions is **not** equivalent to $\frac{3}{4}$

(a) Which fraction?

.....
(1)

(b) Work out $\frac{1}{12} + \frac{5}{6}$

$$\frac{1}{12} + \frac{5 \times 2}{6 \times 2}$$

$$= \frac{1}{12} + \frac{10}{12}$$

.....
(2)
(Total for question = 3 marks)

Q16. NON-CALCULATOR

(a) Work out $\frac{2}{3} - \frac{1}{5}$

$$\frac{5 \times 2}{5 \times 3} - \frac{1 \times 3}{5 \times 3}$$

$$= \frac{10}{15} - \frac{3}{15}$$

.....
(2)

(b) Work out $\frac{2}{3} \times \frac{3}{4}$

Give your answer as a fraction in its simplest form.

$$\frac{2 \times 3}{3 \times 4}$$

$$=$$

.....
(2)
(Total for question = 4 marks)

Q17. NON-CALCULATOR

(a) Work out $\frac{2}{7} + \frac{1}{5}$

$$5 \times \frac{2}{7} + \frac{1 \times 7}{5 \times 7}$$

$$= \frac{10}{7} + \frac{7}{35}$$

.....
(2)

(b) Work out $1\frac{2}{3} \div \frac{3}{4}$

$$= \frac{5}{3} \div \frac{3}{4}$$

$$= \frac{5}{3} \times \frac{4}{3}$$

.....
(2)
(Total for question = 4 marks)

Q18. NON-CALCULATOR

(a) Work out $1\frac{3}{4} + 3\frac{1}{2}$

$$1\frac{3}{4} + 3\frac{1}{2}$$

$$= \frac{7}{4} + \frac{7 \times 2}{2 \times 2}$$

$$= \frac{7}{4} + \frac{14}{4}$$

.....
(1)

(b) Work out $\frac{3}{7} \times \text{£}28$

$$\frac{3}{7} \times 28$$

$$= \frac{3 \times 28}{7}$$

£.....
(2)
(Total for question = 3 marks)

Q19. NON-CALCULATOR

(a) Work out $2\frac{1}{7} + 1\frac{1}{4}$

$$2\frac{1}{7} + 1\frac{1}{4}$$

$$= \frac{4 \times 15}{4 \times 7} + \frac{5 \times 7}{4 \times 7}$$

$$= \frac{60}{28} + \frac{35}{28}$$

.....
(2)

(b) Work out $1\frac{1}{5} \div \frac{3}{4}$

Give your answer as a mixed number in its simplest form.

$$\begin{aligned}
 &1\frac{1}{5} \div \frac{3}{4} \\
 &= \frac{6}{5} \div \frac{3}{4} \\
 &= \frac{6}{5} \times \frac{4}{3}
 \end{aligned}$$

.....
(2)
(Total for question = 4 marks)

Q20. NON-CALCULATOR

(a) Work out $\frac{1}{5}$ of 70

$$\begin{aligned}
 &\frac{1}{5} \times 70 \\
 &= \frac{70}{5}
 \end{aligned}$$

.....
(1)

Fiona has to work out the exact value of $48 \div \frac{1}{2}$

She writes

$$48 \div \frac{1}{2} = 24 \quad \times$$

Fiona's reason is, "There are 2 halves in 1, so there will be 24 halves in 48"

(b) Explain what is wrong with Fiona's reason.

.....
.....
.....

(1)
(Total for question = 2 marks)

Q21. NON-CALCULATOR

Write the following fractions in order of size.
Start with the smallest fraction.

Find common denominator

$$\frac{1 \times 4}{3 \times 4} \quad \frac{3 \times 3}{4 \times 3} \quad \frac{1 \times 3}{4 \times 3} \quad \frac{7}{12} \quad \frac{1 \times 6}{2 \times 6}$$

Write in original form

.....
(Total for question = 2 marks)

Q22. NON-CALCULATOR

Here are two fractions.

$$\frac{7}{5}$$

$$\frac{5}{7}$$

Work out which of the fractions is closer to 1. You must show all your working.

$$\begin{aligned} & \frac{7}{5} - 1 \\ = & -\frac{5}{5} \\ = & \end{aligned}$$

$$\begin{aligned} & 1 - \frac{5}{7} \\ = & \frac{7}{7} - \\ = & \end{aligned}$$

(Total for question = 3 marks)

Q23. NON-CALCULATOR



The normal price of a denim shirt at a shop is £9.60 960p

On Special Offer Day, there is $\frac{1}{3}$ off the normal price.

Billy has £13. 1300p Has he enough money to buy two denim shirts on Special Offer Day? You must show all your working.

$$\begin{aligned} & 960 \times \frac{1}{3} \\ = & 960 \div 3 \\ = & 320 \end{aligned}$$

$$\begin{array}{r} 320 \\ 3 \overline{) 960} \end{array}$$

(Total for Question is 4 marks)

Q24. NON-CALCULATOR

Sue has 2 cats.

Each cat eats $\frac{1}{4}$ of a tin of cat food each day. → Food needed each day = $2 \times \frac{1}{4} = \frac{1}{2}$

Sue buys 8 tins of cat food. Has Sue bought enough cat food to feed her 2 cats for 14 days? You must show how you get your answer.

$\frac{1}{2}$ tin needed per day

(Total for question = 3 marks)