

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

Number

Four operations with fractions (non-calculator)

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments
- You must not use a calculator



Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

Questions 1 to 28 are **foundation** tier only

Q1.

Work out $\frac{5}{6} + \frac{7}{12}$

Give your answer as a mixed number.

(Total 3 marks)

Q2.

Work out $\frac{1}{4} + 0.5$

Circle your answer.

0.30

0.6

0.75

0.9

(Total 1 mark)

Q3.

Work out $2\frac{3}{4} \times 1\frac{5}{7}$

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

(Total 3 marks)

Q4.

(a) Work out $\frac{3}{5}$ of 200

(2)

(b) Work out $25.8 + 12.6 \div 2$

(2)

(Total 4 marks)

Q5.

Circle the calculation which works out half of 12

$12 \div 0.5$

$2 \div 12$

$12 \times \frac{1}{2}$

$12 \div 50 \times 100$

(Total 1 mark)

Q6.

Work out $\frac{11}{18} - \frac{1}{3}$

(Total 2 marks)

Q7.

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

(Total 1 mark)

Q8.

Work out $\frac{5}{8} + \frac{13}{16}$

Give your answer as a mixed number.

(Total 3 marks)

Q9.

Work out the value of $\left(\frac{3}{2}\right)^2$
Give your answer as a mixed number.

(Total 1 mark)

Q10.

Work out $\frac{2}{7} + \frac{6}{7}$
Circle your answer.

$$1\frac{1}{7}$$

$$\frac{8}{14}$$

$$\frac{8}{49}$$

$$1\frac{5}{7}$$

(Total 1 mark)

Q11.

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

(1)

(b) Work out $\frac{3}{8} \div \frac{7}{10}$

(2)

(Total 3 marks)

Q12.

(a) Work out $\frac{1}{4} + \frac{7}{10}$
Give your answer as a fraction.

(2)

(b) Work out $\frac{3}{5} \times \frac{7}{2}$
Give your answer as a mixed number.

(2)

(Total 4 marks)

Q13.

Work out $\frac{1}{2} \times 5$
Circle your answer.

$$\frac{5}{10}$$

$$2\frac{1}{2}$$

$$\frac{1}{10}$$

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

(Total 1 mark)

Q14.

Work out $8\frac{1}{2} \div 2\frac{2}{3}$
Give your answer as a mixed number.

(Total 4 marks)

Q15.

- (a) Work out $\frac{1}{5} + \frac{7}{10}$
Give your answer as a fraction.

(2)

- (b) Work out $\frac{3}{5} \times \frac{7}{2}$
Give your answer as a mixed number.

(2)

(Total 4 marks)

Q16.

Work out the fraction that is halfway between $\frac{1}{2}$ and $1\frac{1}{4}$



(Total 3 marks)

Q17.

Two positive fractions add up to $\frac{1}{3}$
Each fraction has a **different** value.
What could the fractions be?
Give **one** possible answer.

(Total 3 marks)

Q18.

Work out $\frac{5}{6} \div 3$

(Total 1 mark)

Q19.

Work out $2\frac{3}{4} \times 1\frac{7}{9}$
Give your answer as a mixed number.

(Total 3 marks)

Q20.

Work out $\left(\frac{7}{10} - \frac{4}{15}\right) \div \frac{2}{3}$
Give your answer as a fraction.

(Total 3 marks)

Q21.

Work out $\frac{3}{8} \times 11$
Give your answer as a mixed number.

(Total 2 marks)

Q22.

- (a) Work out $9174 \div 11$

(2)

- (b) Work out $\frac{5}{6} + \frac{3}{7}$
Give your answer as a mixed number.

(3)

(Total 5 marks)

Q23.

One week Ruben was paid £210

He spends £90

He saves $\frac{1}{4}$ of the rest.

How much money did he save?

(Total 3 marks)

Q24.

The range of a set of numbers is $15\frac{1}{4}$

The smallest number is $-2\frac{7}{8}$

Work out the largest number.

(Total 3 marks)

Q25.

- (a) Cards in a pack are red or blue in the ratio
red : blue = 2 : 3

What fraction of the cards are **red**?

Circle your answer.

$$\frac{5}{6}$$

$$\frac{2}{3}$$

$$\frac{2}{5}$$

$$\frac{3}{5}$$

(1)

- (b) A different pack has 72 cards.

$\frac{5}{9}$ are yellow.

Work out the number of yellow cards.

(2)

(Total 3 marks)

Q26.

This formula converts temperature in degrees Fahrenheit (F) to kelvin (K)

$$K = \frac{5}{9}(F - 32) + 273$$

A pottery oven is heated to 2192 degrees Fahrenheit.

Work out this temperature in kelvin.

(Total 3 marks)

Q27.

Complete the grid so that when you multiply the three numbers in any column, row or diagonal the answer is 1.

10		$\frac{1}{2}$
$\frac{1}{20}$		20
2	5	

(Total 3 marks)

Q28.

In each box, write a fraction **less** than 1 to make a correct calculation.

$$\boxed{\frac{\quad}{\quad}} \times \boxed{\frac{\quad}{\quad}} = \frac{3}{10}$$

(Total 1 mark)

Question 29 is **higher** tier only

Q29.

Work out $-4 \times -\frac{7}{9}$

Circle your answer.

$$-\frac{28}{36}$$

$$-\frac{28}{9}$$

$$\frac{28}{36}$$

$$\frac{28}{9}$$

(Total 1 mark)