

Fractions (H)

A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR, Pearson-Edexcel and WJEC Eduqas.

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

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

$$= \frac{7}{4} \times \frac{12}{7} = \frac{12}{4} = 3$$

[3]

2. A unit fraction has a numerator equal to 1 for example $\frac{1}{3}$, $\frac{1}{7}$ and $\frac{1}{25}$.

Unit fractions can be written as the sum of two different unit fractions, for example Write each of the following unit fractions as the sum of two different unit fractions.

$$\frac{1}{4} = \frac{1}{5} + \frac{1}{20}$$

$$\frac{1}{5} = \frac{1}{6} + \frac{1}{30}$$

$$\frac{1}{6} = \frac{1}{10} + \frac{1}{15}$$

[3]

3. A bakery bakes small, medium and large pies.

The ratio small : medium : large is 3 : 5 : 2.

What fraction of the pies are large?

10 over 20

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

[1]

4. Calculate.

$$2\frac{3}{8} \div 1\frac{1}{18}$$

Give your answer as a mixed number in its lowest terms.

$$\frac{19}{8} \div \frac{19}{18} = \frac{18 \times 18}{8 \times 19} = \frac{18}{8} = \frac{9}{4}$$

[3]

5. One sheet of A3 card has area $1/8 \text{ m}^2$

The card has a mass of 160 g per m^2

Work out the total mass of 25 sheets of A3 card

$$160 \times \frac{1}{8} = 20\text{g} \quad 20 \times 25 = 500\text{g for 25 sheets.}$$

$$6. \text{ a) Work out } 2\frac{1}{4} \times 3\frac{1}{3} = \frac{9}{4} \times \frac{10}{3} = \frac{90}{12} = 7\frac{1}{2}$$

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

b) Write the numbers 3, 4, 5 and 6 in the boxes to give the greatest possible total.

You may write each number only once.

$$\boxed{6} \frac{1}{\boxed{4}} + \boxed{5} \frac{2}{\boxed{3}}$$

[1]

7. Circle the fraction equivalent to 2.375

$\frac{23}{75}$ $\frac{9}{4}$ $\frac{19}{8}$

8. Which of $\frac{2}{5}$ or $\frac{5}{8}$ is closer in value to $\frac{1}{2}$?

You must show your working.
 $\frac{2}{5} = 0.4$ $\frac{1}{2} = 0.5$
 $\frac{5}{8} = 0.625$ $0.5 - 0.4 = 0.1$
 $0.625 - 0.5 = 0.125$
 $\therefore \frac{2}{5}$ is closer

9. What is 0.12 as a fraction of 0.8? Circle your answer.

$\frac{0.12}{0.8} = \frac{3}{20}$ $\frac{2}{3}$ $\frac{20}{3}$ $\frac{3}{2}$

10. A motor racing circuit has length $5\frac{5}{6}$ miles. A straight section of the circuit has length $1\frac{3}{4}$ miles.

What fraction of the circuit is the straight section?

Give your answer in its simplest form.
 $\frac{1}{4} \div \frac{35}{6} = \frac{1}{4} \times \frac{6}{35} = \frac{42}{140} = \frac{3}{10}$

11. Express 0.15 as a fraction in its simplest form.

$x = 0.1555 \dots$
 $10x = 1.555 \dots$
 $100x = 15.555$
 $90x = 14$
 $\therefore x = \frac{14}{90}$

12. Here are two piles of the same type of paper.

Each sheet of paper is $\frac{7}{1000}$ cm thick.

The taller pile is $10\frac{1}{2}$ cm high.



height of taller pile : height of shorter pile = 3 : 2

Work out the number of sheets of paper in the shorter pile.

$\frac{21}{2} \div \frac{7}{1000} = \frac{21}{2} \times \frac{1000}{7}$
 $= 1500$

$3 : 2$
 $1500 : 1000$
 $\therefore 1000$ pages in shorter pile.