

FRACTIONS: FINDING, MULTIPLYING AND DIVIDING TRANSCRIPT

1. Finding fractions of quantities
2. Multiplying simple fractions
3. Dividing simple fractions

1. Finding a fraction of a given quantity

Ex 1

Find $\frac{1}{2}$ of £46

$$\begin{array}{r} 23 \\ 2 \overline{)46} \end{array}$$

£23

To find $\frac{1}{2}$ of a quantity we simply divide by 2

The denominator (bottom) of the fraction tells us what to divide by.

Ex 2

Find $\frac{2}{3}$ of £54

$$\begin{array}{r} 18 \\ 3 \overline{)54} \end{array}$$

$$\begin{array}{r} 18 \\ \frac{2}{3} \times \\ \hline 36 \end{array}$$

£36

To find $\frac{2}{3}$ of a quantity we divide by 3 then multiply by 2.

The denominator tells us what to divide by, and the numerator tells us what to multiply by.

Ex 3

Find $\frac{3}{4}$ of 120 kg

$$\begin{array}{r} 30 \\ 4 \overline{)120} \end{array}$$

$$\begin{array}{r} 30 \\ \frac{3}{4} \times \\ \hline 90 \end{array}$$

90 kg

Ex 4

Find $\frac{3}{5}$ of 80 kg

$$\begin{array}{r} 16 \\ 5 \overline{)80} \end{array}$$

$$\begin{array}{r} 16 \\ \frac{3}{5} \times \\ \hline 48 \end{array}$$

48 kg

2. Multiplying simple fractions

Ex1

$$\frac{4}{5} \times \frac{3}{7}$$

$$= \frac{4 \times 3}{5 \times 7}$$

$$= \frac{12}{35}$$

Multiply the numerators
and multiply the denominators

Ex2

$$\frac{7}{\cancel{8}_2} \times \frac{\cancel{4}^1}{5}$$

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

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

If possible, cancel any
factor that is common to
a numerator and a
denominator

Ex3

$$\frac{\cancel{14}^2}{\cancel{15}^3} \times \frac{\cancel{3}^1}{\cancel{7}^1}$$

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

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

Ex4

$$\frac{1}{\cancel{7}^6} \times \frac{\cancel{15}^5}{\cancel{21}^3}$$

$$= \frac{1 \times 5}{6 \times 3}$$

$$= \frac{5}{18}$$

3. Dividing simple fractions

To divide by a fraction we simply turn it upside down and multiply instead.

Ex 1

$$\begin{aligned} & \frac{14}{15} \div \frac{7}{10} \\ &= \frac{14}{15} \times \frac{10}{7} \\ &= \frac{2 \times 2}{3 \times 1} \\ &= \frac{4}{3} \quad \text{or} \quad 1 \frac{1}{3} \end{aligned}$$

Ex 2

$$\begin{aligned} & \frac{7}{18} \div \frac{7}{9} \\ &= \frac{7}{18} \times \frac{9}{7} \\ &= \frac{1 \times 1}{2 \times 1} \\ &= \frac{1}{2} \end{aligned}$$

Ex 3

$$\begin{aligned} & \frac{4}{15} \div \frac{3}{10} \\ &= \frac{4}{15} \times \frac{10}{3} \\ &= \frac{4 \times 2}{3 \times 3} \\ &= \frac{8}{9} \end{aligned}$$

Ex 4

$$\begin{aligned} & \frac{7}{18} \div \frac{5}{12} \\ &= \frac{7}{18} \times \frac{12}{5} \\ &= \frac{7 \times 2}{3 \times 5} \\ &= \frac{14}{15} \end{aligned}$$