



- 1 Three of these fractions are equivalent to $\frac{3}{4}$.

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

Write down the fraction that is **not** equivalent to $\frac{3}{4}$.

(1 mark)

$$\frac{6}{8} = \frac{3}{4}, \quad \frac{9}{12} = \frac{3}{4} \text{ and } \frac{12}{16} = \frac{3}{4}$$

$\frac{15}{24}$ simplifies to $\frac{5}{8}$, so $\frac{15}{24}$ is not equivalent to $\frac{3}{4}$

$$\boxed{\frac{15}{24}}$$

- 2 a. Find the missing number: $\frac{2}{3} = \frac{\square}{12}$

b. Find the missing number: $\frac{5}{9} = \frac{20}{\square}$

c. Write $\frac{18}{24}$ in its simplest form.

(3 marks)

a) $3 \times 4 = 12$, so top $\times 4$ too

$$\frac{2}{3} = \frac{8}{12}$$

$$\boxed{8}$$

b) $5 \times 4 = 20$, so bottom $\times 4$ too

$$\frac{5}{9} = \frac{20}{36}$$

$$\boxed{36}$$

c) divide top and bottom by 6

$$\frac{18}{24} = \frac{3}{4}$$

$$\boxed{\frac{3}{4}}$$

3

- a. Write $2\frac{3}{5}$ as an improper fraction.
 b. Write $\frac{17}{4}$ as a mixed number.
 c. Write $\frac{23}{6}$ as a mixed number.

(3 marks)

a) 2 wholes = 10 fifths

$$2\frac{3}{5} = \frac{10}{5} + \frac{3}{5}$$

$$= \frac{13}{5}$$

$$\boxed{\frac{13}{5}}$$

b) how many 4s in 17

$$17 \div 4 = 4 \text{ remainder } 1$$

$$\boxed{4\frac{1}{4}}$$

c) how many 6s in 23

$$23 \div 6 = 3 \text{ remainder } 5$$

$$\boxed{3\frac{5}{6}}$$

4

Work out $\frac{3}{4}$ of 92

(1 mark)

$$92 \div 4 = 23$$

$$23 \times 3 = 69$$

$$\boxed{69}$$

5

Write <, > or = in each box to make the statement true.

a. $\frac{3}{4} \square \frac{5}{8}$

b. $\frac{2}{5} \square \frac{6}{15}$

c. $1\frac{1}{3} \square \frac{7}{5}$

d. Ava writes $\frac{4}{6} \neq \frac{6}{9}$. Is Ava correct? Give a reason for your answer.

(4 marks)

a) make the bottoms the same

$$\frac{3}{4} = \frac{6}{8}$$

6 eighths is more than 5 eighths

$$\frac{3}{4} > \frac{5}{8}$$

b) divide top and bottom by 3

$$\frac{6}{15} = \frac{2}{5}$$

$$\frac{2}{5} = \frac{6}{15}$$

c) use fifteenths

$$1\frac{1}{3} = \frac{4}{3} = \frac{20}{15}$$

$$\frac{7}{5} = \frac{21}{15}$$

$$1\frac{1}{3} < \frac{7}{5}$$

d)

$$\frac{4}{6} = \frac{2}{3}$$

$$\frac{6}{9} = \frac{2}{3}$$

they are equal, so $\neq$ is wrong

$$\text{No, both are } \frac{2}{3}$$

- 6 Write these fractions in order of size, starting with the smallest.

$$\frac{2}{3} \quad \frac{3}{4} \quad \frac{7}{12} \quad \frac{5}{6}$$

(2 marks)

Use a common denominator of 12

$$\frac{2}{3} = \frac{8}{12}, \quad \frac{3}{4} = \frac{9}{12}, \quad \frac{7}{12} = \frac{7}{12}, \quad \frac{5}{6} = \frac{10}{12}$$

In order: $\frac{7}{12}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

$$\boxed{\frac{7}{12}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}}$$

- 7 Work out

a. $3 \times \frac{2}{7}$

b. $\frac{4}{5} \div 2$

c. $5 \times \frac{3}{4}$, giving your answer as a mixed number.

(3 marks)

a) multiply the top only

$$3 \times \frac{2}{7} = \frac{6}{7}$$

$$\boxed{\frac{6}{7}}$$

b) half of 4 fifths

$$\frac{4}{5} \div 2 = \frac{2}{5}$$

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

c)

$$5 \times \frac{3}{4} = \frac{15}{4}$$

$$15 \div 4 = 3 \text{ remainder } 3$$

$$\boxed{3\frac{3}{4}}$$

8

Work out

a. $\frac{3}{4} + \frac{1}{6}$

b. $\frac{5}{6} - \frac{2}{9}$

(4 marks)

a) common denominator 12

$$\frac{3}{4} + \frac{1}{6} = \frac{9}{12} + \frac{2}{12}$$

$$= \frac{11}{12}$$

$$\boxed{\frac{11}{12}}$$

b) common denominator 18

$$\frac{5}{6} - \frac{2}{9} = \frac{15}{18} - \frac{4}{18}$$

$$= \frac{11}{18}$$

$$\boxed{\frac{11}{18}}$$

9

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

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

(3 marks)

Write as improper fractions

$$4\frac{2}{5} = \frac{22}{5} \text{ and } 1\frac{3}{4} = \frac{7}{4}$$

Use denominator 20

$$\frac{22}{5} = \frac{88}{20} \text{ and } \frac{7}{4} = \frac{35}{20}$$

$$\frac{88}{20} - \frac{35}{20} = \frac{53}{20} = 2\frac{13}{20}$$

$$\boxed{2\frac{13}{20}}$$

- 10 96 pupils go on a school trip. $\frac{5}{8}$ of the pupils are in Year 7.

$\frac{1}{3}$ of the Year 7 pupils bring a packed lunch.

How many Year 7 pupils do not bring a packed lunch?

(3 marks)

Year 7 pupils

$$96 \div 8 = 12$$

$$5 \times 12 = 60$$

packed lunch

$$60 \div 3 = 20$$

do not bring one

$$60 - 20 = 40$$

40 pupils

- 11 Work out $3\frac{1}{3} \div 2\frac{1}{2}$

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

(3 marks)

Write as improper fractions

$$3\frac{1}{3} = \frac{10}{3} \text{ and } 2\frac{1}{2} = \frac{5}{2}$$

To divide by $5/2$, multiply by its reciprocal $2/5$

$$(5/2) \times (2/5) = 1, \text{ so this undoes multiplication by } 5/2$$

Dividing by $\frac{5}{2}$ is the same as multiplying by $\frac{2}{5}$

$$\frac{10}{3} \times \frac{2}{5} = \frac{20}{15}$$

Simplify

$$\frac{20}{15} = \frac{4}{3} = 1\frac{1}{3}$$

$1\frac{1}{3}$

12

A rectangular vegetable patch is $2\frac{1}{2}$ m long and $1\frac{1}{3}$ m wide.

- Work out the area of the vegetable patch. Give your answer as a mixed number.
- Work out the perimeter of the vegetable patch. Give your answer as a mixed number.

(4 marks)

a) change to improper fractions

$$\begin{aligned} 2\frac{1}{2} \times 1\frac{1}{3} &= \frac{5}{2} \times \frac{4}{3} \\ &= \frac{20}{6} \\ &= \frac{10}{3} \\ &= 3\frac{1}{3} \end{aligned}$$

$$\boxed{3\frac{1}{3} \text{ m}^2}$$

b) length + width, using sixths

$$\begin{aligned} 2\frac{1}{2} + 1\frac{1}{3} &= 2\frac{3}{6} + 1\frac{2}{6} \\ &= 3\frac{5}{6} \end{aligned}$$

double it

$$\begin{aligned} 2 \times 3\frac{5}{6} &= 6\frac{10}{6} \\ &= 7\frac{4}{6} \\ &= 7\frac{2}{3} \end{aligned}$$

$$\boxed{7\frac{2}{3} \text{ m}}$$