

WelTec/Whitireia Mathematics Series

Fractions Defined

Fractions are a part of a whole. A fraction shows how *part* of an object is compared to the whole object. This diagram shows the fraction two-fifths. Two parts out of five are coloured in. This fraction is written as $\frac{2}{5}$.

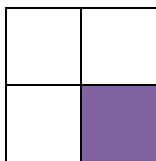


Any fraction can be written as $\frac{\text{part}}{\text{whole}}$

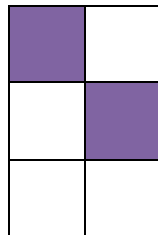
Example 1

Write down the fraction shown in purple for each of these diagrams.

a)



b)



Solution

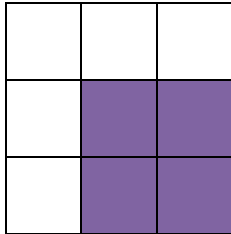
a) Since there are four equal parts with only one square shaded, then the fraction is $\frac{1}{4}$.

b) Since there are six equal parts with two squares shaded, then the fraction is $\frac{2}{6}$.

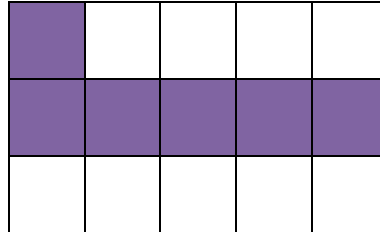
Activity 1

Write down the fraction shown in purple for each of these diagrams.

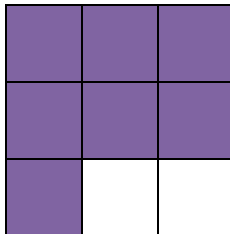
a)



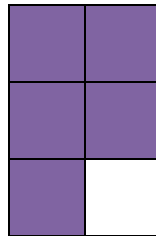
b)



c)



d)



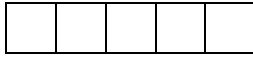
Answer

a) $\frac{6}{9}$ b) $\frac{15}{9}$ c) $\frac{6}{7}$ d) $\frac{9}{5}$

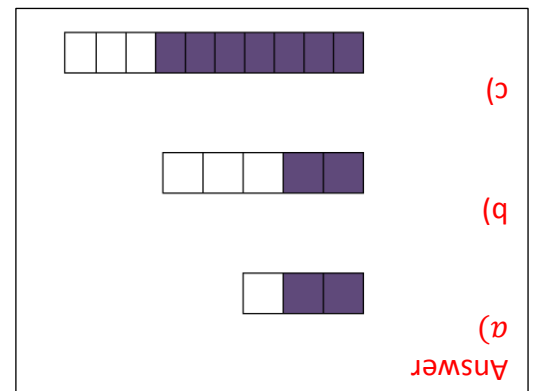
Activity 2

Complete these diagrams by filling in the missing fractions.

a) $\frac{2}{3}$ 

b) $\frac{2}{5}$ 

c) $\frac{7}{10}$ 



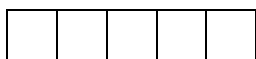
Activity 3

Complete these diagrams by filling in the missing fractions.

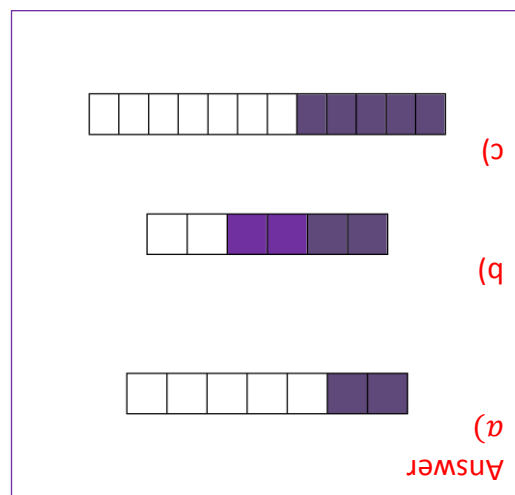
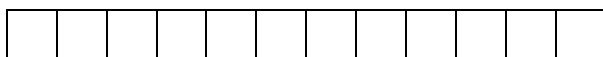
d) $\frac{2}{7}$



e) $\frac{3}{5}$



f) $\frac{5}{12}$



Example 2

Complete these sentences by writing in the correct fraction.

- If we divide a length into eight equal parts, each part will be _____ of the total length.
- Then three of these parts will represent _____ of the total length.
- Eight of these parts will be _____ of the total length.
- Ten of these parts will be _____ of the total length.

Solution

- If we divide a length into eight equal parts, each part will be $\frac{1}{8}$ of the total length.
- Then three of these parts will represent $\frac{3}{8}$ of the total length.
- Eight of these parts will be $\frac{8}{8}$ of the total length.
- Ten of these parts will be $\frac{10}{8}$ of the total length.

Activity 4

Complete these sentences by writing in the correct fraction.

- If we divide a length into nine equal parts, each part will be _____ of the total length.
- Then four of these parts will represent _____ of the total length.
- Nine of these parts will be _____ of the total length.
- Ten of these parts will be _____ of the total length.

Activity 5

Complete these sentences by writing in the correct fraction.

- If we divide a length into twelve equal parts, each part will be _____ of the total length.
- Then five of these parts will represent _____ of the total length.
- Eleven of these parts will be _____ of the total length.
- Thirteen of these parts will be _____ of the total length.

Activity 4

a) $\frac{1}{9}$

b) $\frac{4}{9}$

c) $\frac{6}{9}$

d) $\frac{10}{9}$

Activity 5

a) $\frac{1}{12}$

b) $\frac{5}{12}$

c) $\frac{11}{12}$

d) $\frac{13}{12}$