

FRACTIONS - DECIMALS - PERCENTAGES

FRACTION	DECIMAL	PERCENTAGE
$\frac{1}{2}$		
	0.25	
		75%
$\frac{2}{5}$		
	0.9	
		80%
	0.3	
$\frac{1}{3}$		
		66.6%
$\frac{7}{10}$		
	1.1	
		200%

- 1** Express 30% as a fraction.
 A $\frac{3}{100}$ B 0.3 C 0.03 D $\frac{30}{100}$
- 2** Express 75% as a simplified fraction.
 A $\frac{3}{4}$ B $\frac{75}{100}$ C $\frac{75}{10}$ D $\frac{75}{20}$
- 3** Express 9% as a decimal.
 A 0.9 B 0.09 C 9.0 D 0.009

- 4** What percentage of the shape is shaded?
 A $\frac{1}{2}$ B 50%
 C 0.5 D $\frac{4}{8}$



- 5** Express $\frac{3}{5}$ as a percentage.
 A 20% B 40% C 60% D 80%
- 6** Express 7 as a percentage.
 A 70% B 7% C 0.7% D 700%
- 7** Arrange 0.9, $\frac{1}{4}$ and 30% in descending order.
 A 30%, $\frac{1}{4}$, 0.9 B $\frac{1}{4}$, 30%, 0.9 C 0.9, 30%, $\frac{1}{4}$ D 30%, 0.9, $\frac{1}{4}$
- 8** Arrange in ascending order 0.06, 64%, and $\frac{3}{5}$.
 A $\frac{3}{5}$, 0.06, 64% B 64%, $\frac{3}{5}$, 0.06 C 0.06, $\frac{3}{5}$, 64% D 64%, 0.06, $\frac{3}{5}$
- 9** Express \$24 as a percentage of \$30.
 A 80% B 125% C 1.25% D 20%
- 10** Express 600 mL as a percentage of 2 L.
 A 0.3% B 3% C 30% D 300%
- 11** Find 10% of 80 km.
 A 9 km B 10 km C 8 km D 12 km
- 12** Find 40% of 500 m.
 A 0.2 m B 2 m C 20 m D 200 m
- 13** Increase 60 L by 5%.
 A 57 L B 63 L C 3 L D 360 L
- 14** Decrease 700 km by 50%.
 A 350 km B 300 km C 330 km D 1050 km
- 15** Calculate the percentage increase: \$20 to \$25.
 A 5% B 15% C 20% D 25%
- 16** Carla purchased a lounge for \$2000. She later sold it for \$1500. Express the loss as a percentage of the cost price.
 A 400% B 20% C 25% D 40%

Converting a fraction or a decimal to a percentage

ERROR ALERT!

$\frac{1}{2}\%$ means

$\frac{1}{2} \div 100$

or 0.005.

Changing a fraction or a decimal to a percentage is easy! Just multiply by 100%.

Example 5

What percentage is 5 out of 20?

Solution 5

5 out of 20 means the fraction $\frac{5}{20}$. To change a fraction to a percentage, multiply by 100%.

$$\frac{5}{20} \times 100\% = 25\%$$

Example 6

What is 1.35 as a percentage?

Solution 6

To change a decimal to a percentage, multiply by 100%.

$$1.35 \times 100\% = 135\%$$

Example 7

Arrange the quantities 0.7, $\frac{3}{4}$ and 72% in ascending order.

Solution 7

The first step is to change all the quantities into the same form.

$$0.7 = 0.7 \times 100\% = 70\%$$

$$\frac{3}{4} = \frac{3}{4} \times 100\% = 75\%$$

Ascending order is 70%, 72%, 75% or 0.7, 72%, $\frac{3}{4}$.

Exercise 2:3

1 Change these fractions and decimals to percentages.

a $\frac{73}{100}$

b $\frac{9}{100}$

c 0.56

d 0.085

e $\frac{3}{4}$

f $\frac{2}{5}$

g 0.65

h $\frac{63}{100}$

i 1

j 3.2

k $2\frac{9}{10}$

l 3.04

m 2

n 5

o $\frac{7}{8}$

p $8\frac{5}{8}$

2 Arrange in ascending order.

a 0.4, $\frac{3}{10}$, 35%

b $\frac{2}{5}$, 0.38, 41%

c 1.5, 140%, $\frac{3}{5}$

3 What percentage is 8 out of 40?

4 Find the percentage 90 cm is of 1.5 m.

5 What percentage is 400 mL of half a litre? (*Remember:* Half a litre is 500 mL.)

6 Ryan's mark in his Woodwork exam was 45 out of 60. What was his mark as a percentage?

7 Hassan scored 80 of his team's 120 points. What percentage of the team's points did Hassan score?

8 What percentage is 30 cm of 2 m?

9 What percentage of 2 m is 50 cm?

10 Trevor cut 580 mm from a 600 mm piece of wood. What percentage of the original piece of wood remained?

11 Approximately 3% of Australians are vegetarian. How many of the 2500 Australian people on a cruise ship would you expect to be vegetarian?

12 In the United Kingdom, 18 000 swans die per year. Eating lead sinkers left by fishermen causes 4000 of these deaths. What percentage of swan deaths in the UK each year are caused by fisherman leaving lead sinkers where swans can eat them?

13 In a violent storm, 50% of Nicole's fruit trees were destroyed. After the storm she had 24 fruit trees remaining. How many fruit trees did she have before the storm?