S1

CfE Level 3

Working at Home Workbook

Percentages / Decimals / Fractions

Learning Intention. To be able to -
Find a percentage of a quantity without a calculator
Find a percentage of a quantity with a calculator
Convert between a fraction, decimal & percentage

Find a percentage of a quantity without a calculator

Exercise 1

Calculate the following:

1) 10% of 250	2) 10% of 430	3) 10% of 45
4) 50% of 80	5) 50% of 60	6) 50% 700
7) 25% of 160	8) 25% of 800	9) 25% of 30
10) 75% of 100	11) 75% of 24	12) 75% of 88

Exercise 2

To calculate 40% of 60

➤ Calculate 10% first	10% of 60 = 6
➤ 40% is 10% multiplied by 4	40% of 60 = 6 x 4
	= 24

Calculate the following by first calculating 10%

1) 20% of 40	2) 30% of 270
3) 40% of 80	4) 90% of 30
5) 60% of 60	6) 80% of 180
7) 30% of 25	8) 40% of 56

Exercise 3

To calculate 5% of 60

➤ Calculate 10% first	10% of 60 = 6
➤ 5% is half of 10% so divide by 2	5% of 60 = 6 ÷ 2
	= 3

Calculate the following by first calculating 10%

1) 5% of 80	2) 5% of 280
3) 5% of 88	4) 5% of 42
5) 5% of 100	6) 5% of 250
7) 5% of 90	8) 5% of 230

Exercise 4

1) If you have 12 sweets and Frank ate 50% of them, how many sweets are left?

2) If you got a present of £40, and you save 50% of it, how much would you have saved?

3) How much is 50% of £8.60?

4) How much is 25% of £12?

5) In a vegetable patch with 40 cabbages, growing in it, 25% are damaged by caterpillars. How many cabbages are damaged?

6) A box of crisps has 48 packets inside it. If the tuck shop sells 75%, how many packets will it sell?

7) What is 10% of £80?

8) John was asked to sell 20 books of raffle tickets. He sold most of them, but 10% remained unsold. How many books of tickets did he not manage to sell?

9) What is 10% of 65 kg?

10) What is heavier, 10% of 37 kg or 50% of 6 kg?

Find a percentage of a quantity with a calculator

Example

Calculate 18% of £720

Solution

18 ÷ 100 x 720 = £129.60

Exercise 1

Where applicable, round your answers to 2 decimal places.

1) 12% of 30	2) 15% of 75	3) 56% of 25
4) 14% of 56	5) 7% of 45	6) 15% of 13
7) 9% of 140	8) 4% of 106	9) 7% 0f 50
10) 1% of 500	11) 5.5% of 300	12) 7.5% of 900
13) 0.5% of 400	14) 0.2% of 680	15) 0.4% of 560
16) 110% of 450	17) 120% of 350	18) 150% of 900

Exercise 2

1) During a storm 40% of the tiles were blown off a building. If there were 960 tiles on the roof before the storm, how many were lost?

2) A college noticed that 90% of their students obtained employment when they left. If 1800 students left last year, how many obtained employment?

3) A group of 180 first year pupils were surveyed:-

    20% preferred cheese and onion crisps, 30% preferred prawn cocktail, 40% preferred salt and vinegar and remainder preferred ready salted.

    How many of the 120 people preferred:-

    a) cheese and onion?   b) prawn cocktail?   C) salt and vinegar?

4) A computer game costing £49 is reduced by 5%.
    a) Calculate the discount.
    b) What is the sale price of the game?

Convert between a fraction, decimal & percentage

Exercise 1

Complete the table

Percentage	Is the same as Fraction	Is the same as			Is the same as Decimal
		Units	Tenths	Hundredths	
72%	$\dfrac{72}{100}$	0.	7	2	0.72
63%	$\dfrac{63}{100}$				
14%					
84%					
92%					
49%					
					0.37
					0.18
20%	$\dfrac{20}{100}$	0.	2	0	0.20 _or_ 0.2
40%					
80%					
10%					
					0.60
					0.3
					0.7

Percentage	Is the same as Fraction	Is the same as			Is the same as Decimal
		Units	Tenths	Hundredths	
3%	$\dfrac{3}{100}$	0.	0	3	0.03
1%					
5%					
9%					
					0.07
					0.02
4%					
6%					
					0.08

Exercise 2

Complete the following tables

Percentage	Decimal
39%	
41%	
82%	
16%	
33%	
50%	
18%	

Percentage	Decimal
3%	
14%	
30%	
22%	
6%	
19%	
7%	

Percentage	Decimal
40%	
9%	
10%	
12%	
1%	
99%	
100%	

Complete the following tables

Decimal	Percentage
0.27	
0.79	
0.15	
0.62	
0.99	
0.36	
0.70	

Decimal	Percentage
0.6	
0.01	
0.5	
0.03	
0.07	
0.02	
0.40	

Decimal	Percentage
0.26	
0.08	
0.99	
0.09	
1	
0.11	
0.75	

Exercise 3

Complete the following tables, writing the fractions in their simplest form:

Percentage	Fraction
5%	
10%	
20%	
30%	
40%	

Percentage	Fraction
50%	
60%	
70%	
80%	
90%	

Percentage	Fraction
100%	
25%	
75%	
$33\frac{1}{3}$ %	
$66\frac{2}{3}$ %	

Exercise 4

Complete the following table:

Fraction	Percentage
$\dfrac{15}{100}$	
$\dfrac{90}{100}$	
$\dfrac{12}{100}$	

Fraction	Percentage
$\dfrac{2}{100}$	
$\dfrac{9}{100}$	
$\dfrac{1}{10}$	

Fraction	percentage
$\dfrac{45}{50}$	
$\dfrac{8}{25}$	
$\dfrac{21}{25}$	

Exercise 5

Question 1

Copy and complete this table:

Fraction	Decimal	Percentage
	0.04	
		10%
$\dfrac{1}{2}$		
		45%
$\dfrac{7}{50}$		
	0.84	

Question 2

There are 200 children in a school hall, eating lunch. Of these children, 124 have chosen chips as part of their lunch.

(a) What *fraction* of the children have chosen chips?

(b) What *percentage* of the children have chosen chips?

(c) What percentage of the children have *not* chosen chips?

Question 3

In the school canteen, children can choose chips, baked potato or rice. One day 50% choose chips and 26% choose baked potatoes.

(a) What percentage choose rice?

(b) What fraction of the children choose rice?

Question 4

In a car park, 40% of the cars are red and $\dfrac{7}{20}$ of the cars are blue.

(a) What *percentage* are blue?

(b) What *percentage* are *neither* red *nor* blue?

(c) What *percentage* are red or blue?

(d) What *fraction* are red?

(e) What *fraction* are *neither* red *nor* blue?

(f) What *fraction* are red or blue?