Grade 6 – Book C

(CAPS edition)

Workbook

Revised for 2023

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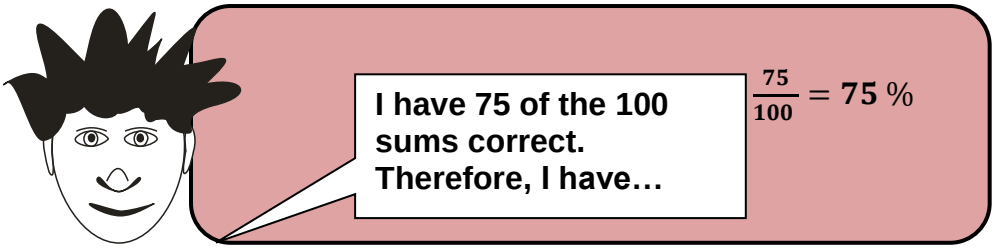
CHAPTER 1 C1

C1.1 Percentages



Percentages are another way of writing fractions with a denominator of 100. The word 'percentage' is derived from the Latin word 'per centum' which means 'per hundred'

Exercise 1: **Date :** _____

(1) Write the following fractions as percentages..

(**HINT:** The denominator must be '100'.)

$(a)\ \frac{23}{100} =$ _____	$(b)\ \frac{60}{100} =$ _____	$(c)\ \frac{75}{100} =$ _____
$(d)\ \frac{78}{100} =$ _____	$(d)\ \frac{120}{100} =$ _____	$(d)\ \frac{9}{100} =$ _____

Study the factors of 100.

10 x 10 = 100	**5 x 20 = 100**	**4 x 25 = 100**	**2 x 50 = 100**

(2) Rewrite the denominator as '100' and then as a percentage.

FRACTIONS	REWRITE WITH A DENOMINATOR OF '100'	PERCENTAGE
$\frac{8}{10}$	$\frac{8}{10} \times \frac{10}{10} = \frac{80}{100}$	**80%** EXAMPLE
$(a)\ \frac{2}{10}$	_____	_____
$(b)\ \frac{4}{5}$	_____	_____
$(c)\ \frac{12}{20}$	_____	_____
$(d)\ \frac{20}{25}$	_____	_____
$(e)\ \frac{3}{4}$	_____	_____

MIXED OPERATIONS

Exercise C1A: **Date : _____**

(1) Write down the correct answers.

a) R100 + R150 x 3 = _____	a) 10 x R12,40 = _____
b) R200 + R150 x 6 = _____	b) 6 x 90c = _____
c) R45,20 x 10 + R100 = _____	c) R14 + R7 x 8 = _____
d) 2 x (R12,50 + R4,20) = _____	d) 3(6 x 15c) = _____
e) (2 x R5) + (2 x R3) = _____	e) 2 x R90 – R30 = _____
f) R100 + R24,20 x 2 = _____	f) R3 450 x 10 = _____
g) 2 x (R2,50 + R1,30) = _____	g) R12, 20 x 20 = _____
h) 5 x R125 + R75 = _____	h) R60 + R350 ÷ 7 = _____
i) R40 + R60 x 2 = _____	i) R15 x 6 = _____
j) 7 x R25 +R125 =	j) R 1000 ÷ 8 = _____
Total:	**Total**:

Total out of 20

$(f)\frac{1}{4}$	_____	_____
$(g)\frac{15}{20}$	_____	_____

PERCENTAGES LARGER THAN 100%

PETROL PRICE IN 1995	INCREASE	PETROL PRICE IN 2018
R 5,00	100%	R 10,00
R 5,00	200%	R 15,00

(3) Convert to an improper fraction and write as a percentage.

FRACTIONS	WRITE AS AN IMPROPER FRACTION WITH '100' AS DENOMINATOR	PERCENTAGE
$1\frac{2}{10}$	$\frac{12}{10}$ x $\frac{10}{10} = \frac{120}{100}$	120% EXAMPLE
$(a)2\frac{4}{10}$		
$(b)1\frac{8}{10}$		
$(c)1\frac{1}{5}$		
$(d)1\frac{5}{25}$		
$(e)2\frac{2}{25}$		_____
(f) **1**		**100 %**
(g) **2**		
*(h)***3**	_____	

C1.2 Simplifying and converting percentages:

Exercise 2: **Date :** _____

(1) Write the percentages as fractions with the denominator of '100' and simplify.

PERCENTAGE	FRACTION	CALCULATIONS
25 %	$\frac{25}{100}$	$\frac{25}{100} \div \frac{25}{25} = \frac{1}{4}$ EXAMPLE
a) 10%	_____	_____
b) 75%	_____	_____
c) 80%	_____	_____
d) 45%	_____	_____
e) 15%	_____	_____
f) 12%	_____	_____
g) 60%	_____	_____
h) 120%	_____	_____
i) 90%	_____	_____
j) 28%	_____	_____
k) 36%	_____	_____
l) 5%	_____	_____
m) 66%	_____	_____
n) 70%	_____	_____
o) 68%	_____	_____
p) 30%	_____	_____

Exercise 3: **Date : _____**

(1) Write the common fractions as decimal fractions and as percentages.

. FRACTIONS	DECIMAL FRACTIONS	PERCENTAGES
$\frac{60}{100}$	0,6	60% EXAMPLE
$(a)\frac{25}{100}$		
$(b)\frac{75}{100}$		
$(c)\frac{90}{100}$		
$(d)\frac{4}{10}$		
$(e)\frac{4}{5}$ x $\frac{20}{20} = \frac{80}{100}$		
$(f)\frac{3}{4}$		
$(g)\frac{5}{20}$		
$(h)\frac{7}{10}$		
$(i)\frac{1}{4}$		
$(j)\frac{2}{5}$		
$(k)\frac{5}{25}$		
$(l)\frac{1}{10}$		
$(m)\frac{3}{5}$		
$(n)\frac{2}{8}$		

C1.3 Calculations using percentages:

Exercise 4: **Date :** _____

Percentage: 10% van 30 = $\frac{10}{100}$ x $\frac{30}{1} = 3$

Fraction : $\frac{10}{100}$ van 30 = $\frac{10}{100}$ x $\frac{30}{1} = 3$

Percentage is only another way of writing a fraction.

10% of 30 = 3	**10% of 40 = 4**	**10% of 35 = 3,5**	**10% of 125 = 12,5**

(1) Write the answers.

(a) 10% of 25 = _____

(b) 10% of 89 = _____

(c) 10% of 300 = _____

(d)10% of 195 = _____

(e)10% of R450 =_____

(f)10% of R50,20 = _____

(g) 10% of 80 = _____

(h) 10% of R12,50 = _____

(i) 10% of R15,50 = _____

(j) 10% of 11,10 = _____

(2) Show your calculations.

(a) 20% of 40

$\frac{20}{100}$ x $\frac{40}{1}$ **OF**

EXAMPLE:

10% of 40 = 4
Therefore 20% = 8

= **8**

(b) 50% of 90

= _____

= _____

(c) 20% of 50

= _____

= _____

(d) 60% of 90

= _____

= _____

(e) 30% of 60

= _____

= _____

(f) 80% of 90

= _____

= _____

(g) 40% of 20

= _____

= _____

(h) 60% of 120

= _____

= _____

(i) 30% of 150

= _____

= _____

*(j) 5% of 150

= _____

= _____

*(k) 5% of 120

= _____

= _____

*(l) 5% of 90

= _____

= _____

*(m) 25% of 250

= _____

= _____

*(n) 15% of 150

= _____

= _____

Exercise 5: **Date :** _____

CONCEPTS: Cost price: Is the total amount of money that it **costs** a manufacturer to produce a given product or provide a given service.
Selling price/Marking price: It is the price for which it is sold.
Profit/Loss: The difference between the cost price and the selling price.
Discount: A deduction from the usual cost of something

a) The selling price of a tie is R25. The buyer qualifies for a 10% discount .
(a) What is the price that the buyer has to pay?

_____

_____

_____

_____

_____

_____

(b) The cost price of a box of apples is R125,80. The selling price is R150.
(a) Calculate the profit.
(b) The buyer qualifies for a 20% discount on the selling price.
What does he pay for the apples?

(a)_____

_____

_____

(b) _____

_____

TIMES TABLE TEST

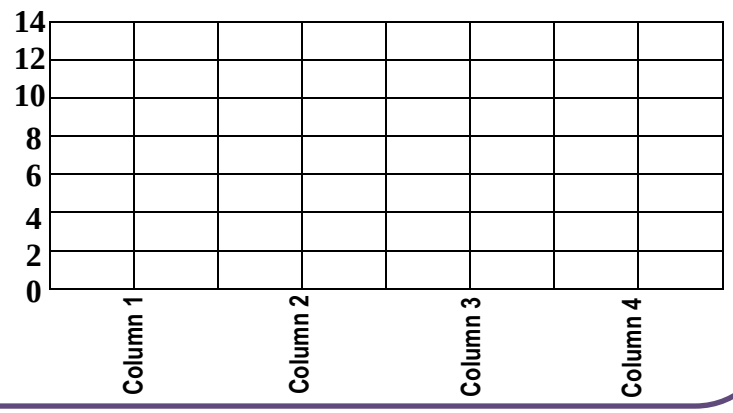
Use the associative law (regrouping) to do column 4.

Excercise C1B: **(2x – 12x)**

Date: _____

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
(a) 9 x 12 = ____	(a) 2 x 8 = _____	(a) 3 x 6 = _____	(a) 3 x 2 x 6 = _____
(b) 7 x 7 = _____	(b) 6 x 4 = _____	(b) 8 x 3 = _____	(b) 3 x 8 x 4 = _____
(c) 9 x 7 = _____	(c) 2 x 4 = _____	(c) 6 x 6 = _____	(c) 5 x 5 x 6 = _____
(d) 9 x 9 = ____	(d) 9 x 8 = _____	(d) 7 x 3 = _____	(d) 8 x 5 x 4 = _____
(e) 4 x 7 = _____	(e) 8 x 8 = _____	(e) 8 x 6 = _____	(e) 2 x 8 x 8 = _____
(f) 12 x 7 = ____	(f) 6 x 8 = _____	(f) 9 x 3 = _____	(f) 7 x 2 x 7 = _____
(g) 6 x 7= _____	(g) 12 x 4 = _____	(g) 12 x 6 =_____	(g) 4 x 8 x 4 = _____
(h) 8 x 8 = _____	(h) 7 x 5= _____	(h) 5 x 9 = _____	(h) 3 x 4 x 8 = _____
(i) 9 x 0 = _____	(i) 3 x 0 = _____	(i) 4 x 15 = ____	(i) 3 x 3 x 3= _____
(j) 4 x 12 =_____	(j) 12 x 12 = ____	(j) 7 x 12 = _____	(j) 6 x 4 x 11 = _____
(k) 12 x 6 = _____	(k) 5 x 15 = _____	(k) 13 x 4 = _____	(k) 7 x 9 x 0 = _____
(l) 9 x 40 = _____	(l) 12 x 30 = _____	(l) 60 x 4 = _____	(l) 4 x 5 x 2 = _____
(m) 4 x 60 = _____	(m) 7 x 70 = _____	(m) 25 x 6 = _____	(m) 9 x 12 x 2 = _____
(n) 13 x 6 = _____	(n) 15 x 7 = _____	(n) 12 x 90 = _____	(n) 6 x 2 x 4 = _____
Total:	**Total:**	**Total:**	**Total:**

Use the data(totals) and draw a line graph.



(c) There are 40 learners in a class. 20 % of the learners have black hair.

(i) How many learners have black hair?

(ii) How many learners do not have black hair?

(iii) What percentage do not have black hair?

(i)_____

_____

_____

(ii)_____

(iii)_____

_____

_____

-_____

(e) I have 25% of the 200 sums correct..

(i) How many sums are correct?

(ii) What percentage of the sums do I have wrong?

(iii) How many sums are wrong?

(i)_____

_____

_____

(ii)_____

_____

(iii)_____

(d) A teacher qualifies for a 40% discount on a pack of red marking pens that usually costs R80.

(i) Calculate her discount?

(ii) How much will she have to pay?

_____

_(i)_____

_____

(ii) _____

_____

(f) The price for a loaf of bread last year was R20. The price increased by 15%. What is the current price of a loaf of bread?

_____

_____

_____

_____

_____

(g) A man sold 45% of his 300 model cars.

(i) How many cars did he sell?

(ii) How many cars are left?

(i)_____

_____

(ii)_____

_____

(h The test results for three learners are as follow: **A:** $\frac{12}{50}$ **B:** $\frac{9}{25}$ **C: 75%**

Which learner has the best result?

_____

_____

What do you understand about tax?

*(i) The price of a bicycle is R12 000,00 excluded VAT.
(a) What does VAT stand for?
(b)) Calculate the price of the bicycle, including VAT (15%).

_____

_____

_____

_____

_____

C1.4 REVISION EXERCISE:

Date : _____

(1) Arrange in ascending order:

Possible total: 30

	CALCULATION (Rewrite the numbers in the same format)	ANSWERS
$\frac{3}{10}$; 3% ; 3		
75% ; 7,5 ; $\frac{1}{4}$		
12,5 ; 125% ; $\frac{1}{100}$		

(3)

(2) Write as percentages.

(a) $\frac{75}{100}$ = _____ | (b) $\frac{80}{100}$ = _____ | (c) $\frac{125}{100}$ = _____ **(3)**

(3) Write the fractions as percentages and show all calculations.

	CALCULATIONS	PERCENTAGES
$(a)\ \frac{9}{10}$		
$(b)\ \frac{1}{5}$		
$(c)\ \frac{16}{20}$		
$(d)\ \frac{15}{25}$		

(8)

MIXED OPERATIONS

Exercise C1C: **Date:** _____

B	O	D	M	A	S
↓	↓	↓	↓	↓	↓
Brackets	of	Division	Multiplication	Addition	Subtraction

(1) **Indicate if the answer is correct or wrong. Write the correct answer.**

		RIGHT	WRONG	FINAL ANSWER
(a)	3 + (5 x 5) – 8 = 20			
(b)	12 + 3 x 4 = 60			
(c)	36 ÷ 6 x 6 + 4 = 40			
(d)	14 + (14 x 2) ÷ 2 = 21			
(e)	56 ÷ 7÷ 2 x 5 = 20			
(f)	30 + (12 x 5) – 45 = 45			
(g)	12 + 12 x 4 = 96			
(h)	6 x 1 x 6 + 4 x 2 = 80			
(i)	90 + (15 x 2) ÷ 2 = 105			
(j)	(4 x 5) + (2 x 6) = 32			
(k)	40 + 40 x 2 = 160			
(l)	12 + 36 x 4 = 156			
(m)	6 x 0 x 6 + 14 x 5 = 76			
(n)	12 + 6 – 8 x 2 = 52			
(o)	(12 x 5) + (12 x 6) = 132			

(4) Write the percentages as common fractions in its simplest form.

(a) **45%**		
(b) **35%**		
(c)**25%**		
(d)**15%**		

(8)

(5) Write step by step.

(a) 10% of 800

= _____

= _____

(b) 20% of 60

= _____

= _____

(6)

(c) 30% of 50

= _____

= _____

(d) 40% of 120

= _____

= _____

(e) 30% of 90

= _____

= _____

(f) 10% of 150

= _____

= _____

(6) Do the following. Write a number sentence and show all calculations.

A jeweller has a 20% promotion on all the watches just before Christmas. The normal selling price of one watch is R200.

(2)

(i) Calculate the selling price after 15% VAT was added added to the normal selling price.

(ii) Calculate the price after 20% discount was deducted from the selling price in (i)

(i)_____(ii) _____

_____

_____

TIMES TABLE TEST

Exercise C1D:

Date: _____

Use the associative law to complete column 4.

(2x-12x)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
(a) 9 x 9 = _____	(a) 8 x 8 = _____	(a) 3 x 6 = _____	(a) 2 x 2 x 6 = _____
(b) 7 x 12 = _____	(b) 6 x 6 = _____	(b) 8 x 3 = _____	(b) 3 x 9 x 2 = _____
(c) 7 x 7 = _____	(c) 2 x 12 = _____	(c) 9 x 6 = _____	(c) 5 x 4 x 6 = _____
(d) 9 x 11 = _____	(d) 9 x 8 = _____	(d) 7 x 3 = _____	(d) 5 x 5 x 4 = _____
(e) 5 x 7 = _____	(e) 8 x 12 = _____	(e) 4 x 6 = _____	(e) 2 x 6 x 8 = _____
(f) 8 x 7 = _____	(f) 6 x 8 = _____	(f) 12 x 3 = _____	(f) 7 x 2 x 9 = _____
(g) 6 x 7= _____	(g) 6 x 4 = _____	(g) 12 x 6 =_____	(g) 4 x 4 x 4 = _____
(h) 8 x 8 = _____	(h) 7 x 7 = _____	(h) 5 x 8 = _____	(h) 3 x 4 x 7 = _____
(i) 9 x 4 = _____	(i) 3 x 8 = _____	(i) 4 x 15 = ____	(i) 3 x 3 x 3= _____
(j) 4 x 8 =_____	(j) 7 x 12 = ____	(j) 7 x 2 = _____	(j) 6 x 4 x 5 = _____
(k) 12 x 6 = _____	(k) 4 x 15 = _____	(k) 16 x 4 = _____	(k) 7 x 9 x 2 = _____
(l) 9 x 6 = _____	(l) 8 x 30 = _____	(l) 80 x 4 = _____	(l) 4 x 6 x 2 = _____
Total:	**Total:**	**Total:**	**Total:**

Use the data(totals) and draw a line graph.