

Worksheet 3 |

Lower Secondary
Stage (6-8)

1st Semester | 2023-2024

Subject: Math

Chapter: 2

Objectives:

- To revise percentage change and reverse percentage problems



- Q1:** Benita's weekly pay was increased from £450 to £468
Work out the percentage increase in Benita's weekly pay.

$$\text{Amount of increase} = 468 - 450 = \pounds 18$$

$$\text{Percentage increase} = \frac{18}{450} = \frac{2 \times 9}{50 \times 9} = 4\%$$

- Q2:** Paulo invested \$7500 at an interest rate of 5.4% per year.
Work out the total amount in his account after one year.

$$100\% + 5.4\% = 105.4\% = 1.054$$

$$7500 \times 1.054 = \$ 7905$$

- Q3:** Salim invested an amount of money at 6% interest.
After one year, interest was added to his account.
The amount in his account was then £901
Work out the amount of money Salim invested.

Old	New
x	901
100	106

$$\frac{106}{100} x = \frac{901 \times 100}{106}$$

$$x = \pounds 850$$

Q4: In a sale, normal prices are reduced by 12%.

a) The normal price of a case is £45

Work out the sale price of the case.

b) The price of a computer is reduced by £69

Work out the normal price of the computer.

← Amount of change.

$$a) \quad 45 \times 0.88 = \pounds 39.60$$

$$b) \quad 0.12 \times x = 69$$
$$\frac{0.12}{0.12} x = \frac{69 \times 100}{0.12 \times 100}$$
$$x = \frac{6900}{12} = \pounds 575.$$

Q5: Of the number of people a company employs, 64% are men.

The company employs 112 men.

Work out the number of people the company employs.

Old New

x 112

100 64

$$\frac{64x}{64} = \frac{100 \times 112}{64} = 175 \text{ people.}$$

Q6: A flight normally costs £650

It is reduced by 18%.

How much will the flight now cost?

$$\begin{array}{r} 13 \quad 9 \\ 650 \times 18 \\ \hline 1050 \\ 5200 \\ \hline 1170 \end{array}$$

$$650 - 117 = \pounds 533$$

- Q7: Magda got 54 out of 75 in a science test.
 a) Work out 54 out of 75 as a percentage.
 Dwayne got 45% of the total marks in a history test.
 Dwayne got 63 marks.
 b) Work out the total number of marks for the history test.

$$a) \frac{54}{75} \div 3 = \frac{18}{25} \times 4 = \frac{72}{100} = 72\%$$

$$b) \begin{array}{l} x \times 63 \\ 100 \times 45 \end{array} \quad \frac{45}{x} = \frac{100 \times 63}{45}$$

$$x = 140 \text{ marks.}$$

- Q8: Jack bought a computer for \$875 and later sold it for \$735.
 Work out his percentage loss.

$$\text{amount of change} = 875 - 735 = \$140$$

$$\text{Percentage change} = \frac{140}{875} \div 5 = \frac{28}{175} \div 7 = \frac{4}{25} \times 4 = 16\%$$

- Q9: In a sale, normal prices are reduced by 35%.
 The sale price of a clock is £78.
 Work out the normal price of the clock.

	Old	New
x	x	78
100	100	65

$$\frac{65}{x} = \frac{100 \times 78}{65}$$

$$x = \$120$$

- Q10: Linton's salary is £28 000
His salary is increased by 4.5%.
Work out Linton's new salary.

$$28000 \times \frac{4.5}{100} = \pounds 1260$$

$$28000 + 1260 = \pounds 29260$$

- Q11: Before dieting, Kate's weight was 75 kg.
After dieting, her weight was 66 kg.
Work out Kate's percentage weight loss.

$$\text{Amount of change} = 75 - 66 = 9 \text{ kg}$$

$$\text{Percentage weight loss} = \frac{9 \div 3}{75 \div 3} = \frac{3 \times 4}{25 \times 4} = \frac{12}{100} = 12\%$$

- Q12: David and Gwen bought a house.
After one year, its value had increased by 9% to £196 200
Work out the value of the house when they bought it.

$$\begin{array}{r} \text{old} \quad \text{New} \\ \times \quad 196200 \\ 100 \times 109 \end{array}$$

$$\frac{109 \cancel{x}}{109} = \frac{100 \times 196200}{109}$$

$$\times \pounds 180000$$