المدرسة الوطنية الأرثوذكسية الشميساني

The National Orthodox School Shmaisani

Worksheet 4 |

Lower Secondary Stage (6-8)

1st Semester | 2023-2024

Subject: Math

Chapter: 2

Objectives:

- To revise percentage change
- To reverse percentage problems

Q1: (a) The price of a TV is £260
In a sale the price is decreased by 20%

Work out the price of the TV in the sale.

$260 \times 0.8 = £208$

(b) The number of TVs sold increased from 70 to 98

Work out the percentage increase.

Amount of increase $= 98 - 70 = 28$ TVs

Percentage increase $= \frac{28 \div 7}{70 \div 7} = \frac{4 \times 10}{10 \times 10} = \frac{40}{100} = 40\%$

Q2: The volume of juice in a can is increased from 250ml to 330ml.

Work out the percentage increase.

Amount of increase $= 330 - 250$
$= 80$ mL

Percentage increase $= \frac{80 \times 4}{250 \times 4} = \frac{32}{100} = 32\%$

Q3: A puppy weighed 2kg.
Eight weeks later the puppy weighed 3.5kg

What was the percentage increase in the puppy's weight?

Amount of increase = $3.5 - 2 = 1.5$ kg

Percentage increase = $\frac{1.5}{2} \times \frac{10}{10} = \frac{15}{20} \times \frac{5}{5} = \frac{75}{100} = 75\%$

Q4: Peter's weight decreases from 80kg to 64kg.

Calculate the percentage decrease in Peter's weight.

Amount of decrease = $80 - 64 = 16$ kg

Percentage decrease = $\frac{16 \div 8}{80 \div 8} = \frac{2}{10} = \frac{20}{100} = 20\%$

Q5: Sarah bought a TV for £250
Three years later she sold it for £180

Work out her percentage loss

Amount of loss = $250 - 180$
$= £70$

Percentage Loss = $\frac{70}{250} \times \frac{4}{4} = \frac{28}{100} = 28\%$

Q6: A car is travelling at 40 kilometres per hour.
The car increases its speed to 56 kilometres per hour.

Calculate the percentage increase in the speed of the car.

Amount of increase = 56 − 40
= 16 km per hour.

Percentage increase = $\frac{16 \div 2}{40 \div 2} = \frac{8 \times 5}{20 \times 5} = \frac{40}{100} = 40\%$

Q7: In a sale the price of microwave decreases from £50 to £39.

Work out the percentage decrease in price.

Amount of Sale = 50 − 39
= £11

Percentage decrease = $\frac{11 \times 2}{50 \times 2} = \frac{22}{100} = 22\%$

Q8: Christmas is on its way, so the price of a box of Thornton's chocolates has been increased by 15%!! A box of Thornton's Continental now costs £17.25. How much did it cost originally?

Old	New
x	17.25
100	115

$\frac{85}{85}x = \frac{17.25 \times 100}{115}$

$x = \frac{1725}{115}$

$x = £15$

Q9: Apple is having a 20% off sale. I bought my new Ipod for £40, how much was it originally?

Old	New
x	40
100	80

$\frac{80x}{80} = \frac{40 \times 100}{80}$

$x = £50$

Q10: A special bottle of coke contains 10% more than a normal bottle. The special bottle contains 660 ml. How much does the normal bottle contain?

Old	New
x	660
100	110

$\frac{110x}{110} = \frac{100 \times 660}{110}$

$x = 600$ mL

Q11: Ivan Ukhov the 2012 Olympics high jump gold medallist jumps 2.4 metres. This is 4% lower than the best height he can jump. What is the best height he can jump?

Old	New
x	2.4
100	96

$96x = 100 \times 2.4$

$\frac{96x}{96} = \frac{240 \div 12}{96 \div 12} = \frac{20 \div 4}{8 \div 4} = \frac{5}{2}$

$x = \frac{5}{2} = 2.5$ meters.

Q12: Jacob buys a watch costing £84
This cost includes VAT at a rate of 20%.

How much is the watch without VAT?

Old	New
x	84
100	120

$\frac{120x}{120} = \frac{84 \times 100}{120}$

$x = £70$