CHAPTER TWELVE

PERCENTAGES, COST PRICE, SELLING PRICE AND COMMISSION

Intrduction:

Percentage is the term used when the total number of living or non living things, under consideration is one hundred.

- For examples if one says that 20% of the animals in my farm are goats, then he means that out of every one hundred animals chosen or selected from my farm, 20 of them will be goats.

- Also given that 8% of the students who wrote the exams failed, implies that out of every 100 students who wrote the exams, 8 of them did not pass the exams.

Q1. Find 10% of ¢200

<div align="center">Soln.</div>

10% of $200 = \frac{10}{100} \times 200 = ¢20$.

Q2. 30% of $¢800 = \frac{30}{100} \times 800 = ¢240$.

Q3. Calculate $10\frac{1}{2}\% \; of \; 400$

<div align="center">Soln.</div>

$10\frac{1}{2}\% \; of \; 400 = \frac{21}{2}\% \; of \; 400 = \frac{21 \times 400}{2 \times 100} = 42$.

Percentage increase:

- To determine the present number of living or non living things after a percentages increase, the value of the percentage increase is first determined, and then added to the original number of the living or non living things

Q1. There are 250 students in a school. If this number is increased by 20%, determine the number students who are now in the school.

<div align="center">Soln.</div>

Original number of students = 250, and the value of the percentage increase = 20%

of $250 = \frac{20}{100} \times 250 = 50.$

Number of students who are now in the school = 250 + 50 = 300 students.

Q2. A girl has an amount of ¢400. If this is increased by 40%, how much does she now have?

<div align="center">Soln.</div>

Initial amount = ¢400 and percentage increase = 40% .

Value of the percentage increase $= \frac{40}{100} \times 400 = 160, \therefore increase = ¢160 =>$

Amount she is now having $= ¢400 + ¢160 = ¢560.$

Q3. The cost price of a pen is ¢500. If this is to be increased by $2\frac{1}{5}\%,$

determine the new price

<div align="center">Soln.</div>

Initial cost of pen = ¢500 and percentage increase $= 2\frac{1}{5}\% = \frac{11}{5}\%$

Value of percentage increase $= \frac{11}{5}\% \ of\ 500 = \frac{11 \times 500}{5 \times 100} = 11, =>$

the increase in cost price $= ¢11.$

The cost of the pen presently $= ¢500 + ¢11 = ¢511.$

Percentage decrease:

- To determine the present number of living or non living things after a percentage decrease, the value of the percentage decrease is first determined, and then subtracted from the original number of the living or non living things.

Q1. There are 250 students in a school. If this number is decreased by 10%, how many students are now in the school.

<div align="center">Soln.</div>

Initial number of students = 250 and percentage decrease = 10%.

Value of the percentages decrease = 10% x 250 = 25, => $decrease = 25$.

Number of students who are now in the school = 250 – 25 = 225 students.

Q2. The price of a book is ¢80. If this is to be decreased by 10%, determined the new price

<div align="center">Soln.</div>

Initial cost price = ¢80 and percentage decrease = 10%

$The\ value\ of\ the\ percentage\ decrease = \frac{10}{100} \times 80 = 8, => the\ decrease =$

¢8 and the new price of the pen = 80 – 8 = ¢72.