AVERAGE/PERCENTAGE

- ## Average = Sum of Values/Number of Values

Question-If the heights of males in a group are 5.5, 5.3, 5.7, 5.9, 6, 5.10, 5.8, 5.6, 5.4, 6. Then find the average height.

Solution: Given the height of males: 5.5, 5.3, 5.7, 5.9, 6, 5.10, 5.8, 5.6, 5.4 and 6

Average = Sum of heights of males/total number of males

A = (5.5+5.3+5.7+5.9+6+5.10+5.8+5.6+5.4+6)/10

A = 56.3/10

A = 5.63

- ## Percentage = (Value／Total Value) × 100

Question 2: There are 150 students in a class. Out of them, 75 are girls. Find the percentage of girls in the class.

Solution:

Total number of students in the class = 150

Girls in the class = 75

% of girls in the class = (75／150) × 100 = (7500／150) = 50%

Percentage Error = [(Approximate Value – Exact Value) / Exact Value] × 100

Example 1: A scale measures wrongly a value as 8 cm due to some marginal errors. Calculate the percentage error if the actual measurement of the value is 12 cm.

Solution:

Given,
Approximate value = 8 cm
Exact value = 12 cm

Percentage Error = (Approximate Value – Exact Value / Exact Value × 100)

Percentage Error = (8 – 12)/12 × 100

= -33.3%

Percentage Change=(New Value−Old Value)/OldValue×100

Question: What is the percentage change in the weight of Krishna, if he had decreased to 77 kg from 82 kg?

Solution:

Using the formula: Percentage Change=(New Value−old Value)/OldValue×100
Percentage Change=77−8282×100
= -6.09

Hence the percent change in his weight = 6.09%.

Thus, Krishna has reduced 6.09% of his weight.

Percentage Decrease = Decrease in value/Original value × 100

Question: A few days ago, the cost of mangoes per 100 kg was Rs. 10000. Now is it being sold at Rs. 8000. What is the percentage decrease in the value?

Solution:

Percentage decrease in the cost of mangoes is:

= (8000−10000)/10000 × 100
= −200010000 × 100
= -0.2 × 100
= -20%

Hence, there is a 20% decrease in value of 100 kg mangoes.

Percentage Increase=Increased Value/Original Value×100

Question: What is the percentage change in the rent of the house if on the month of January it was Rs. 10,000 and in the month of March it is Rs. 15,000?

Solution:

We can clearly see that there is an increase in the amount of rent.

Here, Increased value = 15000 – 10000 = 5000

Original Value = 10000

Percentage Increase = (Increased Value/Original Value) × 100

= (5000/10000) × 100

= 50%

Hence, there is a 50% increase in the amount of rent.