1. Unitary Method

The method in which we first find the value of a unit quantity and then use it to find the value of any required quantity is called the *unitary* method. The unitary method can be used to solve problems related to distance, time speed, and calculating the cost of materials. The unitary method is used for various applications.

The unitary method consists of two type of variations:

▪ **Two quantities are said to be in direct variation if one quantity increases, then the other also increases or when one quantity decreases, the other also decreases.**

▪ **Two quantities are said to be inverse variation if,**

    o **On increasing one quantity, the other quantity decreases.**

    o **On decreasing one quantity, the other quantity increases.**

Let us consider some examples:

Example 1: **The cost of 15 pens is Rs 360, What is the cost of 8 such pens?**

Solution:

    Cost of 15 pens = Rs, 360.

    Cost of 1 pen = Rs. 360/15.

    Cost of 8 pen = (360/15) x 8 = Rs 192.

Example 2: **18 men can make 90 identical tables in one day. Find how many men will make 20 such tables in one day?**

Solution:

    In one day, 90 tables are made by 18 men.

    In one day, 1 tables are made by 18/90 men.

In one day, 20 tables are made by (18/90) x 20 men = 4 men.

Example 3 : 15 mat weavers in 150 days weave 60 mats.

1 mat weaver in 150 days weave 60/15 mats.

30 mat weavers in 150 days weave 60/15 X 30 mats.

30 mat weavers in 1 day weave 60/15 X 30/150 mats.

30 mat weavers in 75 days weave 60/15 X 30/150 X 75 mats = 60 mats. (Ans)

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