<u>SECTION D</u>

29. By reduction of Rs 2 per kg in the price of sugar, Mohan can buy 2 kg sugar more for Rs 224. Find the original price of sugar per kilogram.

OR

A train covers a distance of 90 km at a uniform speed. Had the speed been 15 km/h more, it would have taken half an hour less for the journey. Find the original speed of train.

30. The rate at which the monthly salary of a person increases annually is an A.P. If he was drawing Rs 4500 p.m. in his 11th year of service and Rs6900 p. m. in his 27th year of service, find his salary at the start and the annual increment. Also find the monthly salary after 30 years.

31. If all sides of a parallelogram touch a circle, show that the parallelogram is a rhombus.

32. Water is flowing at 14.4 km/h through a pipe of diameter 14 cm into a conical tank which has base radius 1.4 m. Find the time in which the level of water in the tank rises by 60 cm.

OR

The difference between the outer and inner curved surface areas of a hollow right circular cylinder, 14 cm long is 88 sq.cm. If the volume of the metal used in making the cylinder is 176 cu. cm., find the outer and inner diameters of the cylinder.

33. A hollow cone is cut by a plane parallel to the base and the upper portion is removed. If the curved surface of the remainder is $\dfrac{8}{9}$ th of the curved surface of the whole cone, find the ratio of the line segments into which the cone's altitude is divided by the plane.

34. A straight highway leads to the foot of the tower. A man standing at the top of the tower observes a car at an angle of depression of 30^0, which is approaching the foot of tower with a uniform speed . Six seconds later, the angle of depression of the car is found to be 60^0. Find the time taken by the car to reach the foot of the tower from this point

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