

MODEL ACTIVITY TASKS

CLASS – X

MATHEMATICS

1. Choose the correct answer and write it :

The total interest of a principal in n yrs. at the rate of simple interest of $r\%$ per annum is $\frac{pnr}{25}$,
the principal will be

- (a) Rs. $2p$ (b) Rs. $4p$ (c) Rs. $\frac{p}{2}$ (d) Rs. $\frac{p}{4}$

Answer the following questions:

- 2.** (i) If the height of two right circular cylinders are in the ratio $3 : 4$ and perimeters are in the ratio $1 : 2$, then find the ratio of their volumes.
(ii) AB and AC are two chords of a circle which are perpendicular to each other. If AB = 4 cm. and AC = 3 cm., then find the length of the radius of the circle.
- 3.** If simple interest and compound interest of a certain sum of money for two years are Rs. 8400 and Rs. 8652, then find the sum of money and the rate of interest.
- 4.** If the ratio of two roots of the quadratic equation $ax^2 + bx + c = 0 [a \neq 0]$ is $1 : r$, then show that

$$\frac{(r+1)^2}{r} = \frac{b^2}{ac}$$

- 5.** Prove that if any straight line passing through the centre of a circle bisects any chord, which is not a diameter, then the straight line will be perpendicular on that chord.
- 6.** Height of a right circular cylinder is twice of its radius. If the height would be 6 times of its radius, then the volume of the cylinder would be greater by 539 cubic dcm., find the height of the cylinder.