

THEORY

1. The rate of change of the area of a square is $10 \text{ cm}^2/\text{s}$. Find the rate of change of its side length when the side length is 5 cm .

2. A particle moves along a straight line with a constant acceleration of 2 m/s^2 . Find the rate of change of its velocity when its displacement is 10 m .

3. A right-angled triangle has a hypotenuse of length 10 cm . One of the legs is increasing at a rate of 1 cm/s . Find the rate of change of the area of the triangle when the leg is 6 cm .

4. A cylinder of height 10 cm is being filled with water. The water level is rising at a rate of 2 cm/s . Find the rate of change of the volume of water in the cylinder when the water level is 5 cm .

5. A particle moves in a circular path of radius 5 m with a constant angular velocity of 2 rad/s . Find the rate of change of its linear velocity when the angle subtended by the arc is 30° .

Q. No.	Answer
1.	2 cm/s
2.	2 m/s
3.	$1 \text{ cm}^2/\text{s}$
4.	$100 \text{ cm}^3/\text{s}$
5.	10 m/s

ANSWERS

1. 2 cm/s

2. 2 m/s

3. $1 \text{ cm}^2/\text{s}$

4. $100 \text{ cm}^3/\text{s}$

5. 10 m/s

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