

Centum Preparation 100 Days plan class 12 Maths

Q.No.	DAY - 48
294	<p>7. A beacon makes one revolution every 10 seconds. It is located on a ship which is anchored 5 km from a straight shore line. How fast is the beam moving along the shore line when it makes an angle of 45° with the shore?</p>
295	<p>8. A conical water tank with vertex down of 12 metres height has a radius of 5 metres at the top. If water flows into the tank at a rate 10 cubic m/min, how fast is the depth of the water increases when the water is 8 metres deep?</p>
296	<p>9. A ladder 17 metre long is leaning against the wall. The base of the ladder is pulled away from the wall at a rate of 5 m/s. When the base of the ladder is 8 metres from the wall.</p> <p>(i) How fast is the top of the ladder moving down the wall?</p> <p>(ii) At what rate, the area of the triangle formed by the ladder, wall, and the floor, is changing?</p>
297	<p>10, A police jeep, approaching an orthogonal intersection from the northern direction, is chasing a speeding car that has turned and moving straight east. When the jeep is 0.6 km north of the intersection and the car is 0.8 km to the east. The police determine with a radar that the distance between them and the car is increasing at 20 km/hr. If the jeep is moving at 60 km/hr at the instant of measurement, what is the speed of the car?</p>
298	<p>Example 7.12</p> <p>For what value of x the tangent of the curve $y = x^3 - 3x^2 + x - 2$ is parallel to the line $y = x$.</p>

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299	<p>Example 7.13</p> <p>Find the equation of the tangent and normal to the Lissajous curve given by $x = 2 \cos 3t$ and $y = 3 \sin 2t, t \in \mathbb{R}$.</p>
300	<p>Example 7.14</p> <p>Find the acute angle between $y = x^2$ and $y = (x - 3)^2$</p>