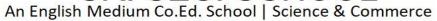


HREE ACADE





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Class - 12th

Chapter-8

Subject Maths

Worksheet-36

Application of Derivatives

- Find the slope of the tangent to the curve $y = x^3 x$. 1.
- Find the slope of the tangent to the curve $y = \frac{x-1}{x-2}$, $x \ne 2$ at x = 10. 2.
- Find the point at which the tangent to the curve $y = \sqrt{(4x-3)} 1$ has its slope 2/3. 3.
- Find the equation of all lines having slope 2 and being tangent to the curve $y + \frac{2}{x^2 + 3} = 0$. 4.
- Find points on the curve $\frac{x^2}{4} + \frac{y^2}{25} = 1$ at which the tangent are 5.
 - (i) parallel to x-axis

- (ii) parallel to y-axis
- Find the equation of tangent to the curve given by $x = a \sin^3 t$, $y = b \cos^3 t$ at a point where $t = \pi/2$. 6.
- Find the equation of normal to the curve $y = \sin^2 x$ at a point $\left(\frac{\pi}{2}, \frac{3}{4}\right)$. 7.
- Find the equations of the tangent and normal to the given curves at the indicated points: 8.

(a)
$$y = x^2 + 4x + 1$$
 at $x = 3$

(b)
$$y^2 = 4ax$$
 at $x = a$

(c)
$$xy = a^2$$
, at $\left(at, \frac{a}{t}\right)$

(d)
$$y^2 = 4ax$$
, at $\left(\frac{a}{m^2}, \frac{2a}{m}\right)$