MISCELLANEOUS EXERCISES
Answers to NCERT/CBSE MATH (Class XII)textbook
Chapter 6
APPLICATIONS OF DERIVATIVES

4. Find the equation of the normal to curve $x^2 = 4y$ which passes through the point $(1, 2)$.

$4.x^2 = 4y$

$\Rightarrow 2x = 4\frac{dy}{dx}$

$\Rightarrow x = 2\frac{dy}{dx}$

$\Rightarrow \frac{dy}{dx} = \frac{x}{2}$

The point is (1,2)

$\Rightarrow \frac{dy}{dx}\Big]_{x=1} = \frac{x}{2}\Big]_{x=1} = \frac{1}{2}$

$\Rightarrow$ Slope of tangent $= \frac{1}{2}$

$\Rightarrow$ Slope of normal =-2

Equation of normal :

y-2=-2(x-1)

$\Rightarrow$ y-2=-2x+2

$\Rightarrow$ y=-2x+4

$\Rightarrow$ y + 2x - 4 =0