

Unit 3.8 Day 4 - Implicit differentiation- 1st & 2nd derivatives

For each problem, use implicit differentiation to find $\frac{d^2y}{dx^2}$ in terms of x and y .

1) $4y^2 + 2 = 3x^2$

2) $5 = 4x^2 + 5y^2$

3) $x^2 + y^2 = 1$

4) $y^2 = x^2 + 2x$

5) $y^2 + 2y = 2x + 1$

Find the lines that **(a) tangent** and **(b) normal** to the curve at the given point.

6) $x^2 + xy - y^2 = 1$, at $(2, 3)$

7) $x \sin 2y = y \cos 2x$, $(\pi/4, \pi/2)$