

Calculus AB
Implicit Differentiation Worksheet

Name _____

Period _____

1. Find $\frac{dy}{dx}$ at $(-2,1)$, for $2y^2 + y + x = 1$.

2. Find $\frac{dy}{dx}$ for $y^3 + 2\sqrt{y} + 3x = 2$.

3. Find $\frac{dy}{dx}$ for $xy + y = 2$.

4. Find $\frac{dy}{dx}$ for $\tan(xy) = x$.

5. Find the points of all horizontal and vertical tangents for $x^2 + y^2 - 4x + 4y + 8 = 16$.

6. Given $x^2 - y^2 = 16$, find $\frac{d^2y}{dx^2}$ in terms of x and y .

7. Find the points at which the graph of the equation $4x^2 + y^2 - 8x + 4y + 4 = 0$ has a vertical or horizontal tangent line.