

Unit 2: Implicit Differentiation MINI Quiz

Name: _____

Date: _____

Period: _____

****Show all work. NO Calculators.****

1.) If $x^2 + 3xy + 2y^2 = 5$, then find $\frac{dy}{dx}$.

- a. $-\frac{2y}{x+4y}$ b. $\frac{2x+3y}{3x+4y}$ c. $\frac{2x-y}{3x+y}$ d. $-\frac{2x}{3+4y}$ e. $-\frac{2x+3y}{3x+4y}$

2.) If $x + 3xy - y^2 = 3$, then at the point $(1,1)$, $\frac{dy}{dx}$ is:

- a. undefined b. -4 c. -1 d. 2

3.) If $x^2 + \sin y - 3y = 8$, then in terms of x and y , $\frac{dy}{dx} =$ ____.

- a. $-\frac{2x}{3y+\cos y}$ b. $-\frac{2x+\cos y}{3}$ c. $\frac{2x}{3-\cos y}$ d. $\frac{2x}{3y-\cos y}$ e. $\frac{2x+\cos y}{3y}$

4.) Use implicit differentiation to find an equation of the tangent line to the ellipse

$$\frac{x^2}{2} + \frac{y^2}{8} = 1 \text{ at } (1,2).$$