

Name _____ Date _____

Ch3 Review 4

Find the derivative.

1. $f(x) = \frac{x^4 - 8x^2 + 2}{x^2}$

2. $y = 4\sqrt{x} + 3 \tan x$

3. $f(x) = x^2 e^{5x}$

4. $y = \frac{\sin x}{x}$

5. $g(x) = \sqrt{x} + 4 \sec x$

6. $f(x) = \sin^{-1}(x^3)$

7. $y = e^{\csc^{-1} x^2}$

8. $f(x) = \ln(\cos x)$

Use implicit differentiation

9. $x^2y^3 = 2x + 1$

10. $3x^2 - 5xy + y^2 = 10$

11. Find the equation of the tangent line to $x^2 + 2xy - y^2 = 1$ at point $(5, 2)$

12. At what points does $y^2 = x^3 + 3x^2$ have horizontal tangents?