Calculus Name_____

Implicit Differentiation Practice

Date_____ Period____

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

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

2) $2 = 5x - y^2$

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

4) $x = -3xy^2 + 2$

5) $3x^2 = -5y + 5x^3y$

6) $4x + 5x^2y = 3y^2$

7) $(2y^3 + 1)^2 = 5x$

8) $3x^2 = (2y^3 + 5)^2$

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

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

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