Name:_____

Worksheet: Part 4 Segment 3: Power Rule for Derivatives

1. Find derivatives of the following functions:

a. $y = 7x^8$ _____

b. $y = 3x^{-4}$ _____

c. $y = 7$ _____

d. $y = 3x^2 - 7x + 1$ _____

e. $y = 4x^{-3} + x^{\frac{3}{4}} - 3x$ _____

f. $y = \frac{4}{x^3} + 6x + 2$ _____

g. $y = 5\sqrt{x} + \frac{2}{3}x^3$ _____

h. $y = 5t^{\frac{4}{5}}$ _____

i. $y = \frac{1}{(4x^3)}$ _____

2. Finding the equation of the tangent line at the given point for the following functions:

a. $y = \frac{5}{2}x^2 + \frac{1}{2}$ at $(1,3)$ _____

b. $y = \frac{x^4}{2} + 3x$ at $x = 0$ _____

c. $y = 3x^2 - 10$ at $x = 2$ _____

d. $y = 3\sqrt{x} - x$ at $x = 4$ _____

3. Where is the tangent line to $y = -3x^2 + 4$ a horizantal line?

4. Where is the tangent line to $f(x) = \frac{2x^3}{3} - \frac{7x^2}{2} + 6x$ a horizantal line?