**Practice Quiz Derivatives** **Name**_____

*Introduction to Calculus*

**Find the derivative of each function. <u>Simplify each answer</u>.**

1) $y(x) = x^4 - 6\sin(x) + 8(7)^x$

2) $g(x) = e^x \cos(x)$

3) $J(x) = \frac{1}{2}(6)^{8x-1}$

4) $f(x) = \frac{1}{\sqrt{2x-1}}$

5) $y = \frac{5x^{2/3}}{7}$

6) $f(x) = 2\sqrt{10x}$ (Careful: Use chain rule!)

7) $f(x) = \frac{-3}{2x^4}$

8) $f(x) = \dfrac{(7x^2 - x + 5)^4}{2}$

9) $f(x) = \tan^4(3x - 1)$

10) $y(x) = \dfrac{(2)^{3x}}{(6 - 2x)^3}$

**Find the derivative of each function. Do NOT simplify answers.**

11) $f(x) = 2x^3(6x^3 - x)^3$

12) $f(x) = \dfrac{(5x^6 - 8)^4}{5^{3x-2}}$

13) $f(x) = \left(\dfrac{\sin x}{9x^2 + 1}\right)^{12}$

14) $f(x) = \cos(3x) \cdot (4x-1)^6 \cdot (2^x)$