CALCULUS 12 **DIFFERENTIATION QUIZ 1**

Name:_____

Date:_____

- Unless indicated otherwise, find the first derivative of the given function with respect to x.
- Simplify your final answer. Write your answer with positive exponents whenever possible.
- **Assume that x meets all required restrictions unless you are asked to specifically state restrictions.**

1. $f(x) = 2x^5 - 3x + 5^2$

2. $f(x) = \frac{7+3x}{2x^6-4x^3}$

3. $f(x) = x^{-5}(3x + 10)$

4. $f(x) = 12$

5. $f(x) = \frac{2x+1}{3x^5-5x^{-3}}$

6. $f(x) = \sqrt[4]{x^3} + 2x$

7. Find the third derivative of $f(x) = \sqrt[3]{x^2}$. State any restrictions if they exist.