MT 1800 Calculus I
Derivatives Long Quiz 2
24 Points

Name: _____

Find each of the following derivatives by hand. You do not need to simplify.

1. $f(x) = x^4$ $f'(x) =$ _____

2. $f(x) = 4^x$ $f'(x) =$ _____

3. $h(t) = 100 + 9t - 16t^2$ $h'(t) =$ _____

4. $f(t) = 17e^2$ $f'(t) =$ _____

5. $g(x) = \ln(x + x^3)$ $g'(x) =$ _____

6. $f(x) = \sqrt{x} + \frac{1}{\sqrt{x}}$ $f'(x) =$ _____

7. $y = -2\sin(3t + 5)$ $\frac{dy}{dt} =$ _____

8. $g(t) = 3t^5 + 5 \cdot 3^{-2t}$ $g'(t) =$ _____

9. $f(x) = x^3 \cdot \ln x$ $f'(x) =$ _____

10. $f(x) = \dfrac{\cos x}{1+x^2}$ $f'(x) =$ _____

11. $y = \left(4x^2 - 6\right)^3$ $\dfrac{dy}{dx} =$ _____

12. $y = 4e^{x^2 - 17x}$ $\dfrac{dy}{dx} =$ _____