

GATEWAY EXAM

Math 141

Name: _____

For each problem, find $\frac{dy}{dx}$.

1. $y = -7x^6 + 2x^{2/3} - 3e^{-2x} - 5$

2. $y = (-3x^{-5/4} + 4)^{1/4}$

3. $y = 4^{6\sin(2x)} - \frac{1}{x^3 - 2x^2}$

4. $y = 2 \ln(e^{5x} + \sec(2x + 1))$

5. $y = 3 \arcsin(x) \ln(x^2) 10^x$

6. $y = \frac{4 \cos(3x + 1) - 6x}{2x}$

7. $y = 6^{\csc(\ln(x))}$

8. $y = \frac{x^3(3 + 4x)^5}{5}$

9. $y^5 + 2x^3y^2 = \tan(x^5)$

10. Find the second derivative of $y = \arctan(3x^2)$