



Math 181
Chapter 2 Quiz

Full Name _____
Full Name _____
Full Name _____
Row No. _____ Date _____

All questions worth 10 points except where noted.
No work = No credit. Scrap work not accepted.

For problems (1) through (4), calculate the following derivatives

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

2. $y = \tan(x^2 e^{x^3+2x})$

3. $y = \frac{1}{\sqrt[3]{x} + \sqrt{x}}$

4. $y = \frac{(x+\lambda)^4}{x^4 + \lambda^4}$, λ is a constant

5. Find the derivative (y') implicitly for $x^2 \cos y + \sin(2y) = xy$

For (6) and (7), find the equation of the line tangent to the given function through the given point

6. $y = \frac{x}{1-x^2}$, at $x = 2$

7. $x^2 + 4xy + y^2 = 13$ at $(2,1)$

8. Find any horizontal tangents for the function given by $y = \frac{e^x}{1+x^2}$

9. Find the second derivative for problem number (1), $y = (x^4 - 3x^2 + 5)^3$

10. Find the equation of the tangent line for $y = e^{x/4}$ at $x = 0$. Estimate $y(0.01)$ with this equation. What is the percentage error compared to what it should be?