

MAT 129 – 002

Fall 2009

Test Two

Calculators may not be used on this test.

Show all work.

1. Determine $f'(x)$ where $f(x) = \frac{\sin x}{x^2}$.

2. Determine $f'(x)$ where $f(x) = \sec(1+x^2)$.

3. Determine $f'(x)$ where $f(x) = (x^2 - x + 1)^3$.

4. Determine $f'(x)$ where $f(x) = (2x-5)^4(8x^2-5)^{-3}$.

5. Determine $f'(x)$ where $f(x) = \frac{(x-1)^4}{(x^2+2x)^5}$.

6. Determine $f'(x)$ where $f(x) = \sin(x \cos x)$.

7. Determine y' where $1+x = \sin(xy^2)$.

Problems 8 and 9 are on the other side.

8. Determine y' and y'' where $y = \sqrt{x^2 + 1}$.

9. Two cars start moving from the same point. One travels south at 60 mi/h and the other travels west at 25 mi/h. At what rate is the distance between them increasing two hours later?