

Due Thursday 03/09/17 at the beginning of class.

Directions:

- Print out this file and write your solutions in the space provided. YOUR WORK MUST BE NEAT, EASY TO FOLLOW. Show all your work and box your final answer.
- You may use notes and textbook, but not the help of anything else.
- Staple, if needed.

On my honor, as an Aggie, I certify that the solution submitted by me is my own work. I had neither given nor received unauthorized aid on this work.

Signature: _____

- 1.
- 60%
- Differentiate:

(a) $f(x) = x^9 - 3x^3 + \frac{1}{x^3} + \frac{1}{\sqrt[7]{x^3}} + 22$

(b) $f(z) = (z^4 + 2z^2 - 33z + 123)(15 - 12z + z^{12} + 13)$

(c) $g(x) = A + \frac{B}{x} + \frac{C}{x^2}$, where A , B , and C are constants

(d) $F(x) = \frac{1 - 2x - x^5}{\sqrt{2x - 4}}$

2. 15% Find the equation of the tangent line to $f(x) = \frac{1 + \sqrt{x}}{x^2}$ at $x = 1$.

3. 10% The position function of an object is $s(t) = t^4 - 3t^3 + t^2 - t + 1$ where t is in seconds and s is in feet. What is the velocity of the object at any time t ?

4. 15% Find the points on the curve $y = 2x^3 - 2x^2 - 2x + 15$ where the tangent line is horizontal.