

MATH 1080, SPRING 2006, HW SET 3

You need to show all your work and explain with following the guideline described in the class webpage to get the full credit.

HW 3 Due on Thursday 02/02/06

0. Memorize all definitions and go over examples given in class.

1- 10. Use the rules (power, constant, sum, difference, product, quotient, and the chain rules) to find the derivative $f'(x)$ of the following function $f(x)$.

(Note that if you don't show all of your work, there will be no credit given. Try to solve in a separate paper so that the grader can read your solution better.)

Notation: As it is introduced in class, $\cos^n x = (\cos x)^n$ and it is different from $\cos(x^n)$.

1. $f(x) = \sqrt[3]{x} - \frac{3}{x^2}$

2. $f(x) = \frac{x^2}{2x - 1}$

3. $f(x) = (x^2 - 1)^{10}(\sqrt{x} - 3)$

4. $f(x) = \cos^3 x - 2 \cos x$

5. $f(x) = \sin(2x) - \tan^2 x$

6. $f(x) = 2 \cos(\sqrt{x})$

7. $f(x) = \frac{1}{\sin x}$

8. $f(x) = \cos(x^2) \sin^2 x$

9. $f(x) = (\sin x + 2)^6$

10. $f(x) = \left(x + \frac{1}{x}\right)^4$