

MATH 1080, SPRING 2006, PRACTICE EXAM 2

1. Go over all HW problems in HW 5,6, and 7 with solution key posted on the website.
2. Memorize all definitions and formula/rules.
3. All problems in HW 5, 6, and 7 including minimizing the distance of two points problem, Bisection/Newton's methods, and the applications of IVT, Rolle's and MVT Theorems and are important.
4. Include the following problems together with all HW problems in HW 5,6, and 7 for practice problems.

(1) Find the following for $f(x) = x^3 - 3x + 1$.

- (a) critical points
- (b) inflection points (explain)
- (c) local max/local min
- (d) sketch the graph of f
- (e) find the range of x at which f is increasing/decreasing.
- (f) global max and global min of f on $[-2, 2]$

(2) Find critical points, inflection points, local max and local min of f where $f'(x) = -(x + 1)(x - 2)$.

(3) Find critical points, inflection points, local max and local min of f where $f'(x) = -(x + 1)(x - 2)^2$.

(4) Find two numbers whose product is -5 and the sum of whose squares is a minimum.

Good-luck!