Math Xa
Worksheet—Finding Extrema

Fall 2003

For each of the following functions,

- Find all critical points on the specified interval.

- Classify each critical point as a local maximum, a local minimum, an absolute maximum, an absolute minimum, or none of the preceding.

- If the function attains an absolute maximum or minimum, what is its maximum/minimum value?

1. $f(x) = x^3 - 3x + 2$ on $[0, 3]$.

2. $f(x) = 3x^4 - 8x^3 + 3$ on $(-\infty, \infty)$.

3. $f(x) = 3x^4 - 8x^3 + 3$ on $[-1, 1]$.

4. $f(x) = 3x^4 - 8x^3 + 3$ on $(0, 3)$.