

## SECTION 4.3: MAXIMUMS AND MINIMUMS (CLOSED-INTERVAL METHOD)

### 1. The Extreme Value Theorem

2. For each problem below, (i) find all critical points of the function on the given interval, (ii) use the Extreme Value Theorem to determine the absolute maximum and absolute minimum of the function, and (iii) use technology to graph the function on the interval to confirm your answer.

(a)  $f(x) = 3x^{1/3} - x$  on  $[-1, 8]$

(b)  $f(x) = \cos(x) - \frac{x}{2}$  on  $[0, 2\pi]$

(c)  $g(x) = \frac{2x}{x^2+1}$  on  $[0, 10]$