

1. Find the absolute extrema for  $y = f(x)$  on the indicated interval.

a.  $f(x) = 2x^3 - 3x^2 - 36x + 62$   $[-3, 4]$

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

2. Find the local extrema for  $y = f(x)$ .

a.  $f(x) = x^3 - 3x$

b.  $f(x) = x^4 - 8x^2 - 10$

3. Consider the function  $f(x) = 2x^3 - 3x^2 - 12x + 5$

a. Determine the critical numbers of  $f(x)$ .

b. Find the local extrema for  $f(x)$ .

c. Find the absolute extrema for  $f(x)$  on  $[-2, 4]$