

## Critical &amp; Extreme Values (4.2)

**Finding Relative Maxima and Minima:** Find the critical values of each function. State the intervals on which the graph is increasing/decreasing. Identify the maxima and minima values.

1)  $y = -x^3 + 2x^2 + x - 6$

2)  $y = -\frac{x^2 - 2x - 15}{x - 6}$

**f'** \_\_\_\_\_  
**x**  
**y**

**f'** \_\_\_\_\_  
**x**  
**y**

3)  $y = -2 \sin 2x$

4)  $y = (2x - 8)^{\frac{2}{3}}$

**f'** \_\_\_\_\_  
**x**  
**y**

**f'** \_\_\_\_\_  
**x**  
**y**

**Finding Absolute Maxima and Minima:** Find the absolute maxima and minima.

5)  $y = x^4 - 3x^2 + 4$ ;  $[-1, 1]$

6)  $y = (x + 2)^{\frac{2}{3}}$ ;  $[-4, -2]$

7)  $y = \frac{x^2}{3x - 6}$ ;  $[3, 6]$

8)  $y = -2 \cos 2x$ ;  $[-\pi, \pi]$