

## 5.2 Critical Points

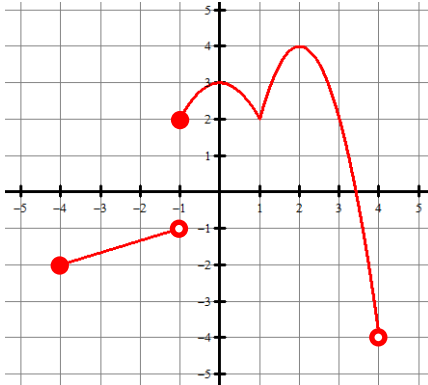
Calculus

Name: \_\_\_\_\_

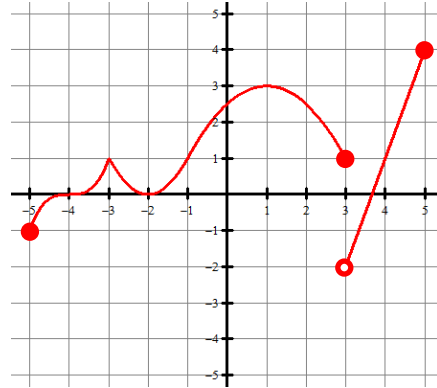
CA #1

Find all extreme values. Identify the type and where they occur. For example, an answer could be written as “absolute max of 3 at  $x = 1$ .”

1.



2.



Find the critical points of each function.

3.  $f(x) = x^2(x - 3)$

4.  $g(t) = (t + 2)^{\frac{2}{3}}$

5.  $h(x) = x + \frac{32}{x^2}$

6.  $f(x) = x^2 \ln x$

7.  $h(x) = 2 \cos(2x)$  where  $-\pi \leq x \leq \pi$

Answers to 5.2 CA #1

1. local max of 3 when $x = 0$ local min of 2 when $x = 1$ abs max of 4 when $x = 2$	2. local max of 1 when $x = -3$ local min of 0 when $x = -2$ local max of 3 when $x = 1$ abs max of 4 when $x = 5$	3. $x = 0, 2$
4. $t = -2$	5. $x = 4$	6. $x = e^{-\frac{1}{2}}$
7. $x = 0, \pm \frac{\pi}{2}, \pm \pi$		