

## 5.2 Critical Points

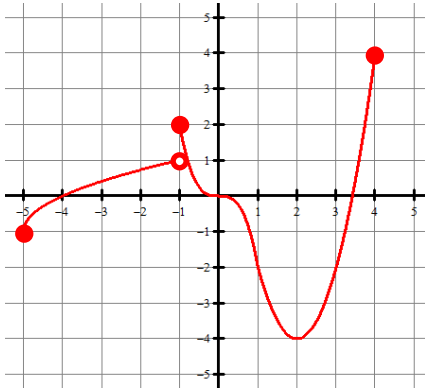
Calculus

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

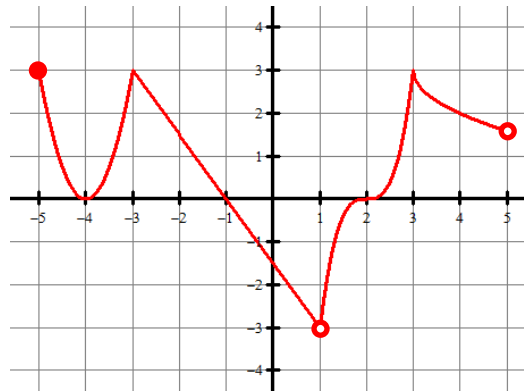
CA #2

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.  $g(x) = x^2 e^x$

4.  $f(x) = \cos(\pi x)$  where  $-\pi \leq x \leq \pi$

5.  $g(t) = \frac{3}{t^2 - 9}$

6.  $h(x) = \sqrt[3]{x + 2}$

7.  $f(x) = x^2 + \frac{3}{x}$

Answers to 5.2 CA #2

1. Local max of 2 when $x = -1$ Abs min of $-4$ when $x = 2$ Abs max of 4 when $x = 4$	2. Abs max of 3 when $x = -5, -3,$ and 3 Local min of 0 when $x = -4$	3. $x = -2, 0$	
4. $x = 0, \pm 1, \pm 2, \pm 3$	5. $t = 0, \pm 3$	6. $x = -2$	7. $x = 0$ and $x = 1.1447$