

# Continuity, End Behavior, and Limits

 Bell work

## 1. Complete the following statement.

- The graph of a \_\_\_\_\_ has no breaks, holes, or gaps. You can trace the graph of a \_\_\_\_\_ without lifting your pencil.
- Points in the domain of a function where the function changes from increasing to decreasing or from decreasing to increasing are called \_\_\_\_\_.

## 2. Write T for true or F for false

- A function  $f$  remains constant on an interval  $I$  if and only if for every  $a$  and  $b$  contained in  $I$ ,  $f(a) = f(b)$  whenever  $a < b$ .
- A function  $f$  is increasing on an interval  $I$  if and only if for every  $a$  and  $b$  contained in  $I$ ,  $f(a) > f(b)$  whenever  $a < b$ .

## Multiple Choices

3. Find  $\lim_{x \rightarrow 0} x^2 - 23!$

- 23
- 23
- 0

4. Find  $\lim_{x \rightarrow 2} \frac{x-5}{x+5}$

- $-\frac{3}{7}$
- $\frac{3}{7}$
- 2

5. Find  $\lim_{x \rightarrow 1} \frac{2}{x-5}$

- $-\frac{1}{2}$
- $\frac{1}{2}$
- $\frac{2}{3}$

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## ANSWERS

### 1. Complete the following statement.

- The graph of a **continuous function** has no breaks, holes, or gaps. You can trace the graph of a **continuous function** without lifting your pencil.
- Points in the domain of a function where the function changes from increasing to decreasing or from decreasing to increasing are called **critical points**.

### 2. Write T for true or F for false

- A function  $f$  remains constant on an interval  $I$  if and only if for every  $a$  and  $b$  contained in  $I$ ,  $f(a) = f(b)$  whenever  $a < b$ . **T**
- A function  $f$  is increasing on an interval  $I$  if and only if for every  $a$  and  $b$  contained in  $I$ ,  $f(a) > f(b)$  whenever  $a < b$ . **F**

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Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

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