Math 4 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5-4 Learn Check** Date\_\_\_\_\_\_\_\_

*I can use the definition of a derivative to compute derivatives.*

*I can calculate, use and interpret the derivative for a function.*

*I can use derivatives and their graphs to identify properties of functions.*

1. Refer to the graph at the right.

1. Find the average rate of change

from A to C.

1. When is the instantaneous rate of change zero?
2. For what interval(s) of *x* is *f’(x)* is negative? e. Estimate when *x =* 4

2. Use the *definition of a derivative*, , to find the derivative of

 

3. Find the derivative of the following functions using the shortcut.

a.  b. 

c.  d. 

4. Refer to the graph of shown at the right.

![[image]]()

1. For what values of *x* is the derivative of *f* positive?
2. For what values of *x* is the derivative of *f* negative?
3. For what values of *x* is the derivative equal to zero?
4. Using a straightedge, draw the line that is tangent to the graph at *x* = -1.
5. Estimate the derivative of the function when *x* = -1.
6. The equation of the function graphed is: . Find 
7. Check your estimate from part **e** by substituting *x* = -1 to the derivative you found in part **f**.