**3.2 The Derivative**

* Find the derivative of a function at *x*.

**Vocabulary:** derivative, differentiable, differentiation, differential calculus

**Concepts:**

**Definition: Derivative**

The derivative of a function *f* is another function  (read “*f* prime”) whose value at any number *c* is  provided that this limit exists and is not  or .

**Formula: **

**Another Formula for the Derivative: **

**Theorem A: Differentiability Implies Continuity**

If  exists, then *f* is continuous at *c*.

**Examples:**

1. Let . Find .
2. If , find .
3. If , find .
4. Find  if .
5. Use  to find  if .
6. Each of the following is a derivative, but of what function and at what point?
   1. ****
   2. ****

**Assignment:**

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