

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

## 2.3 The Derivative Function

**Definition of Derivative Function:** For any function  $f$ , we define the derivative function,  $f'$ , by

The outputs of  $f'(x)$  measure \_\_\_\_\_

1. Use the limit definition of derivative to find the derivative function for each of the following functions.

(a)  $f(x) = \frac{1}{x-1}$

(b)  $g(x) = (3-x)^2$

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2. Compute the derivative of each of the following functions using power rule, or state why power rule cannot be applied.

(a)  $f(x) = 5x^{-2.3}$

(b)  $m(t) = 3^t$

(c)  $k(x) = \frac{x^3}{\sqrt{x}}$