

Name \_\_\_\_\_

Date \_\_\_\_\_

## Calculus Independent Study Path

### Unit 1 Practice Test

Evaluate the following limits, or state that they do not exist:

1.

$$\lim_{h \rightarrow 0} \frac{(x+h)^2 - x^2}{h}$$

2.

$$\lim_{t \rightarrow 0} \frac{\sin t}{1 + \cos t}$$

3.

$$\lim_{x \rightarrow -3} \sqrt[3]{\frac{x+3}{x^3+27}}$$

4.

$$\lim_{x \rightarrow 1} \frac{3x^2 + 5}{x - 1}$$

5.

$$\lim_{y \rightarrow 1} \frac{|y^2 - 1|^{1/2}}{(y^2 + 1)^2}$$

Determine the points of discontinuity of the following functions:

6.

$$f(x) = \frac{\sqrt{9-x}}{\sqrt{x-6}}$$

7.

$$g(x) = \frac{5}{x^3 - x^2}$$