

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

This quiz covers: 2.3 and 2.4.

**Directions:** Complete all questions and **show all applicable work.** Partial credit will be given. All questions are equally weighted.

1.) Evaluate the following limit or state that it does not exist:

$$\lim_{h \rightarrow 0} \frac{\sqrt{1+h} - 1}{h}$$

2.) Let  $f(x)$  be a *left continuous* function at  $x = 1$  and *not a right continuous* function at  $x = 1$ . If  $f(1) = 3$ , what can definitively be said about the following. If nothing can be definitively said, please say that as well.

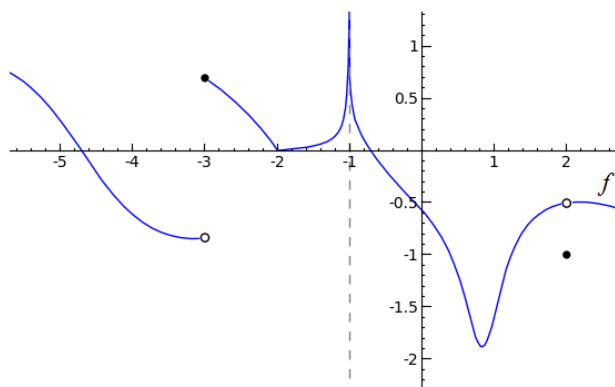
a.  $\lim_{x \rightarrow 1^+} f(x) =$

b.  $\lim_{x \rightarrow 1^-} f(x) =$

c.  $\lim_{x \rightarrow 1} f(x) =$

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3.)



Using the graph above, describe using calculus theory why the graph of the function is or is not continuous at  $x = -2$ .