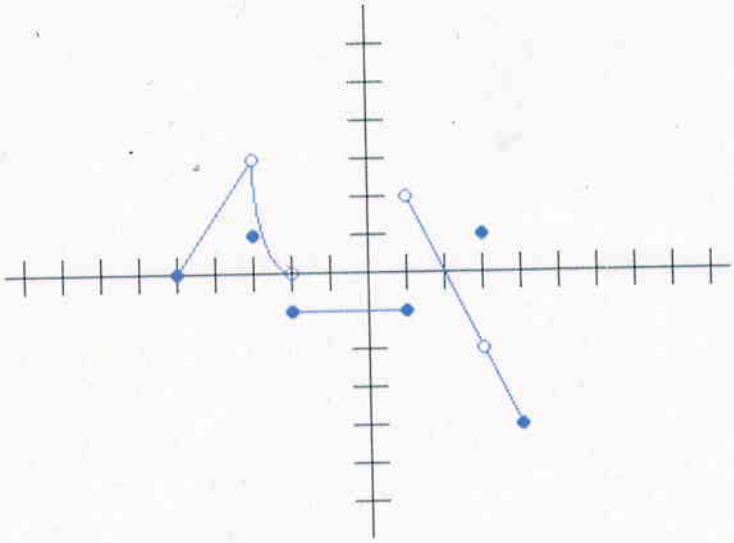
Math 1151, Quiz #1, Fall 2014 Name KEY

**Instructions**: Show all work. Answers without work may only receive partial credit. If you are asked for an explanation, explain as completely as possible. Use exact answers unless specifically asked to round.

1. Shown below is the graph of $f(x)$. Find the limit at the indicated values.

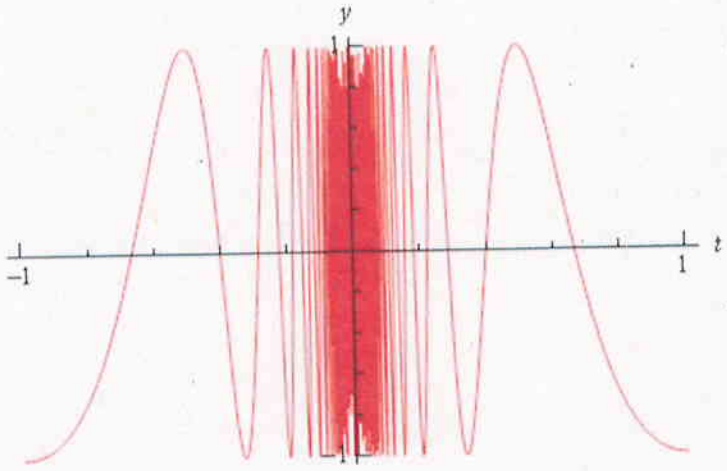


a. $\lim_{x\to -3} f(x)$ = 3

b. $\lim_{x\to 1^+} f(x)$ = 2

c. $\lim_{x\to -2^-} f(x)$ = 0

2. The graph of $g(x)$ is shown below. Explain why $\lim_{x\to 0} g(x)$ does not exist.




because the closer you get to zero the faster the graph oscillates and does not get closer to a particular value

3. Use a table of values below to find the limit of $\lim_{x\to 9} h(x) = \frac{x-9}{\sqrt{x}-3}$.

| $x$ | 8.99 | 8.999 | 8.9999 | 9.0001 | 9.001 | 9.01 |
|---|---|---|---|---|---|---|
| $h(x)$ | 5.9983 | 5.9998 | ≈ 6 | ≈ 6 | 6.0002 | 6.0017 |

$\lim_{x\to 9} \frac{x-9}{\sqrt{x}-3} = 6$