Limit Worksheet

Consider the chart below.

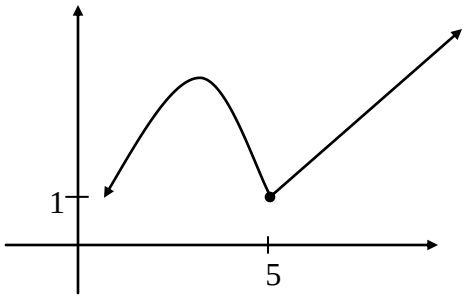
x	1.9	1.99	1.999	2	2.001	2.01	2.1
$f(x)$	3.1	3.01	3.001	3	4.001	4.01	4.1

1. Find $f(2)$.

2. Find $\lim_{x \to 2} f(x)$. Explain your answer.

3. Sketch a graph of the function around the value $x = 2$.

Consider the graph below.



1. Approximate the values for the chart below.

x	4.9	4.99	4.999	5	5.001	5.01	5.1
$f(x)$							

2. Find $\lim_{x \to 5} f(x)$. Explain your answer.

3. Find $f(5)$.

1. Sketch a graph that has the following properties.

$f(3) = 2$

$\lim_{x \to 3^-} f(x) = 4$

$\lim_{x \to 3^+} f(x) = 0$

$f(x) > 0$ for all values of x

2. Refer to the graph of $g(x)$ shown below in order to answer the following questions. If a limit does not exist explain why.

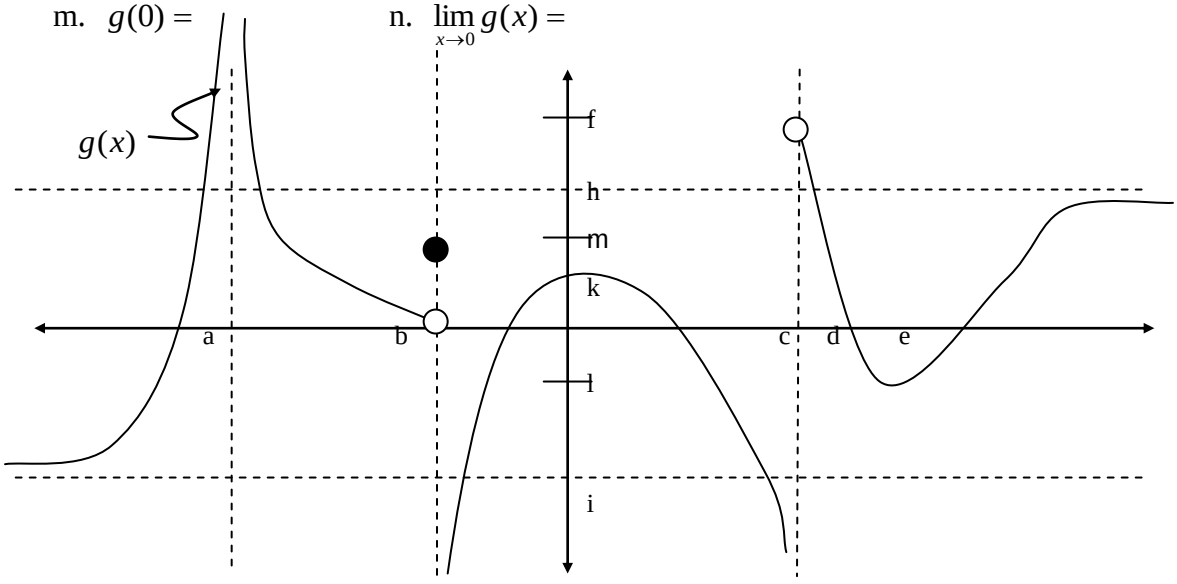
a. $\lim_{x \to \infty} g(x) =$ b. $\lim_{x \to -\infty} g(x) =$ c. $\lim_{x \to a^+} g(x) =$

d. $\lim_{x \to a^-} g(x) =$ e. $\lim_{x \to a} g(x) =$ f. $\lim_{x \to b^+} g(x) =$

g. $\lim_{x \to b^-} g(x) =$ h. $\lim_{x \to b} g(x) =$ i. $\lim_{x \to c} g(x) =$

j. $\lim_{x \to d} g(X) =$ k. $g(a) =$ l. $g(b) =$

m. $g(0) =$ n. $\lim_{x \to 0} g(x) =$



Evaluate the following limits.

1. $\lim_{x\to 2} \dfrac{3x+4}{x+1}$

2. $\lim_{x\to 0^+} \sqrt{x}$

3. $\lim_{x\to 0^-} \sqrt{x}$

4. $\lim_{x\to 0} \sqrt{x}$

5. $\lim_{x\to 0} \dfrac{\sin x}{x}$

6. $\lim_{x\to \pi} \dfrac{\sin(x-\pi)}{x-\pi}$

7. $\lim_{h\to 0} \dfrac{2(3+h)-2(3)}{h}$

8. $\lim_{h\to 0} \dfrac{(x+h)^2 - x^2}{h}$