

Calculus

Notes: Unit 2.1 Intro to Limits (graphically)

Name _____

Period: _____

Use the graphs to identify the limits at the given values. Remember the limit is the y-value the function approaches as you get closer and closer to the given x-value.

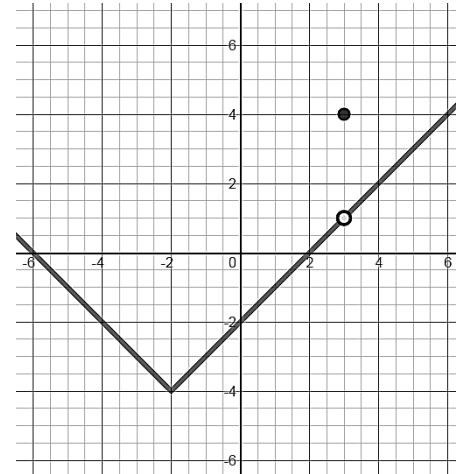
1. _____ $\lim_{x \rightarrow -2} f(x)$

_____ $\lim_{x \rightarrow 0} f(x)$

_____ $\lim_{x \rightarrow 3} f(x)$

_____ $\lim_{x \rightarrow 4} f(x)$

_____ $f(3)$



2. _____ $\lim_{x \rightarrow -2} f(x)$

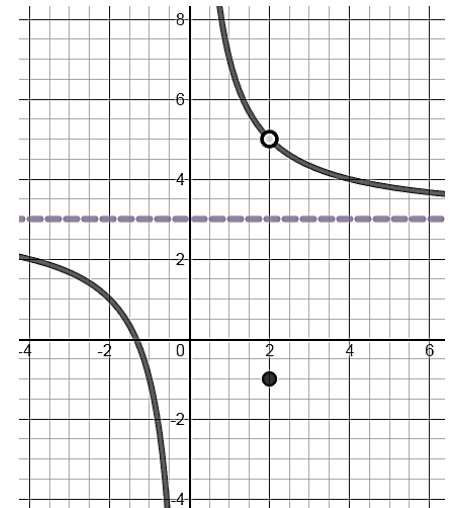
_____ $\lim_{x \rightarrow 0^-} f(x)$

_____ $\lim_{x \rightarrow 0^+} f(x)$

_____ $\lim_{x \rightarrow 2} f(x)$

_____ $\lim_{x \rightarrow 4} f(x)$

_____ $f(2)$



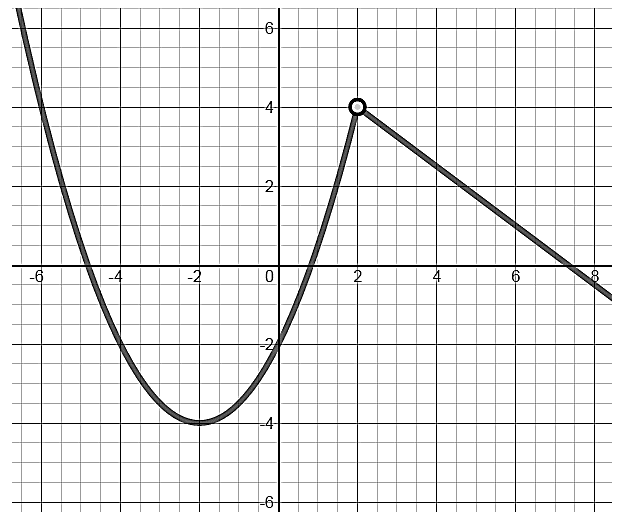
3. _____ $\lim_{x \rightarrow -4} f(x)$

_____ $\lim_{x \rightarrow -2} f(x)$

_____ $\lim_{x \rightarrow 0} f(x)$

_____ $\lim_{x \rightarrow 2} f(x)$

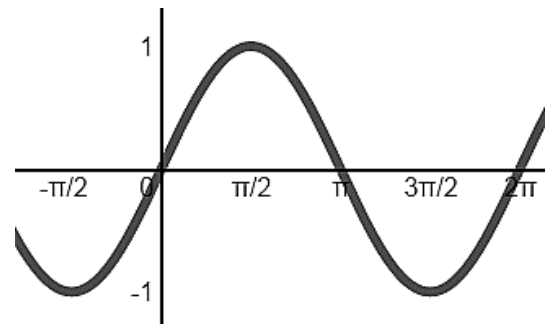
_____ $\lim_{x \rightarrow 6} f(x)$



4. _____ $\lim_{x \rightarrow 0} f(x)$

_____ $\lim_{x \rightarrow \frac{\pi}{2}} f(x)$

_____ $\lim_{x \rightarrow \frac{3\pi}{2}} f(x)$



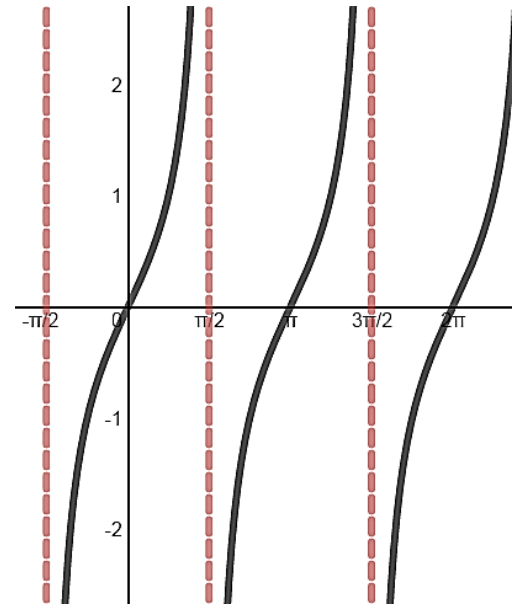
5. _____ $\lim_{x \rightarrow \frac{\pi}{2}^+} f(x)$

_____ $\lim_{x \rightarrow 0} f(x)$

_____ $\lim_{x \rightarrow \frac{\pi}{2}^-} f(x)$

_____ $\lim_{x \rightarrow \pi} f(x)$

_____ $\lim_{x \rightarrow \frac{3\pi}{2}^+} f(x)$



Graph the following piecewise function and identify the requested limits.

6. $f(x) = \begin{cases} x+1 & [-\infty, 1] \\ 2 & (1, 3] \\ -x+5 & (3, \infty) \end{cases}$

_____ $\lim_{x \rightarrow -2} f(x)$

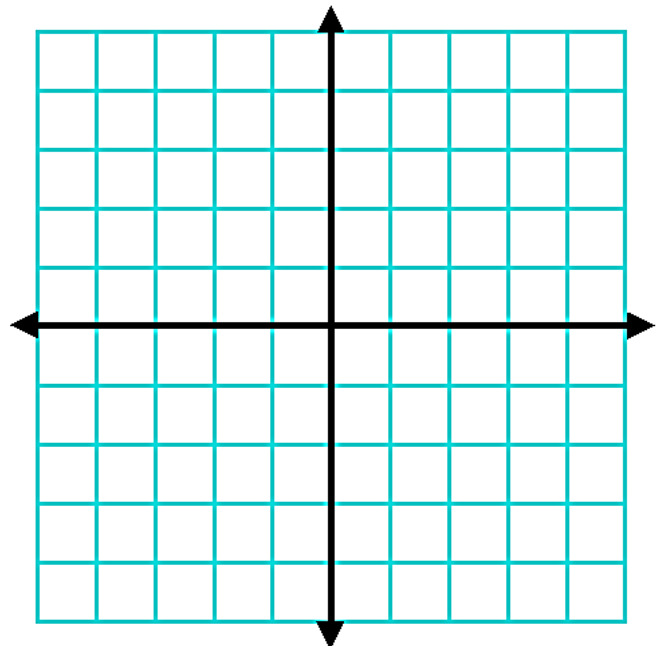
_____ $\lim_{x \rightarrow 0} f(x)$

_____ $\lim_{x \rightarrow 1} f(x)$

_____ $\lim_{x \rightarrow 2} f(x)$

_____ $\lim_{x \rightarrow 3} f(x)$

_____ $\lim_{x \rightarrow 5} f(x)$



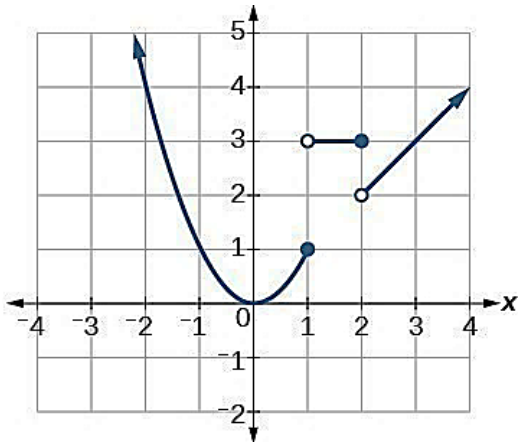
Calculus

HW 7: Unit 2.1 Intro to Limits (graphically)

Name _____

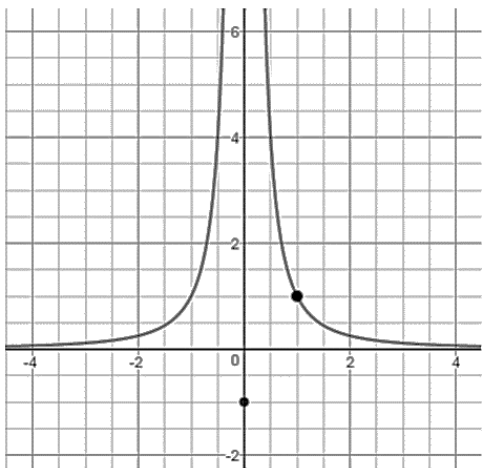
Period: _____

1. Find the requested limits from the graph.



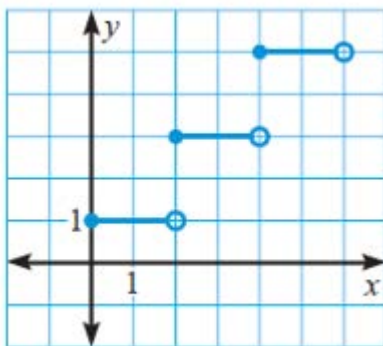
- | | | | |
|----|-----------------------------------|----|-----------------------------------|
| a. | $\lim_{x \rightarrow 1^-} f(x) =$ | b. | $\lim_{x \rightarrow 1^+} f(x) =$ |
| c. | $\lim_{x \rightarrow 1} f(x) =$ | d. | $f(1) =$ |
| e. | $\lim_{x \rightarrow 2^-} f(x) =$ | f. | $\lim_{x \rightarrow 2^+} f(x) =$ |
| g. | $\lim_{x \rightarrow 2} f(x) =$ | h. | $f(2) =$ |

2. Find the requested limits from the graph.



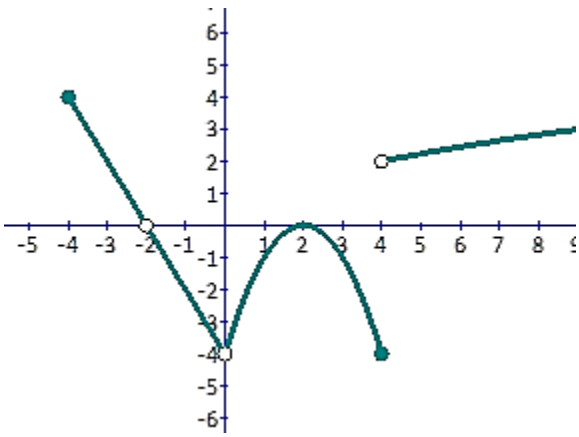
- | | | | |
|----|-----------------------------------|----|-----------------------------------|
| a. | $\lim_{x \rightarrow 0^-} f(x) =$ | b. | $\lim_{x \rightarrow 0^+} f(x) =$ |
| c. | $\lim_{x \rightarrow 0} f(x) =$ | d. | $f(0) =$ |
| e. | $\lim_{x \rightarrow 1^-} f(x) =$ | f. | $\lim_{x \rightarrow 1^+} f(x) =$ |
| g. | $\lim_{x \rightarrow 1} f(x) =$ | h. | $f(1) =$ |

3. Find the requested limits from the graph.



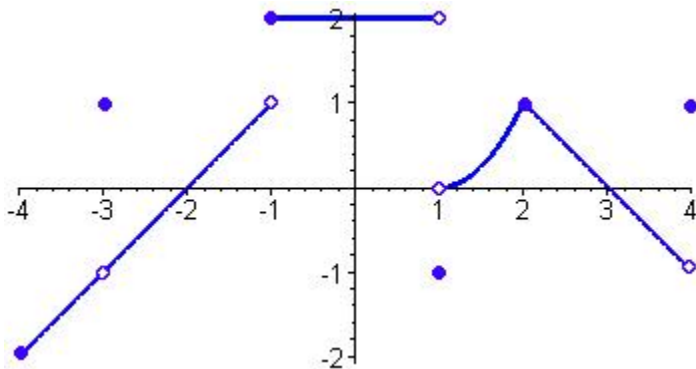
- | | | | |
|----|-----------------------------------|----|-----------------------------------|
| a. | $\lim_{x \rightarrow 4^-} f(x) =$ | b. | $\lim_{x \rightarrow 4^+} f(x) =$ |
| c. | $\lim_{x \rightarrow 4} f(x) =$ | d. | $f(4) =$ |
| e. | $\lim_{x \rightarrow 2^-} f(x) =$ | f. | $\lim_{x \rightarrow 2^+} f(x) =$ |
| g. | $\lim_{x \rightarrow 2} f(x) =$ | h. | $f(2) =$ |

4. Find the requested limits from the graph.



- a. $\lim_{x \rightarrow 4^-} f(x) =$ b. $\lim_{x \rightarrow 4^+} f(x) =$
 c. $\lim_{x \rightarrow 4} f(x) =$ d. $f(4) =$
 e. $\lim_{x \rightarrow 0^-} f(x) =$ f. $\lim_{x \rightarrow 0^+} f(x) =$
 g. $\lim_{x \rightarrow 0} f(x) =$ h. $f(0) =$

5. Find the requested limits from the graph.



- a. $\lim_{x \rightarrow -1^-} f(x) =$
 b. $\lim_{x \rightarrow -1^+} f(x) =$
 c. $\lim_{x \rightarrow -1} f(x) =$
 d. $f(-1) =$
 e. $\lim_{x \rightarrow 1^-} f(x) =$
 f. $\lim_{x \rightarrow 1^+} f(x) =$
 g. $\lim_{x \rightarrow 1} f(x) =$
 h. $f(1) =$

6. Graph the following piecewise function and identify the requested limits.

$$f(x) = \begin{cases} x+2 & (-\infty, 2] \\ 1 & (2, 4] \\ -x+1 & (4, \infty) \end{cases}$$

- a) $\lim_{x \rightarrow 2^-} f(x) =$ b) $\lim_{x \rightarrow 2^+} f(x) =$
 c) $\lim_{x \rightarrow 2} f(x) =$ d) $\lim_{x \rightarrow 4^-} f(x) =$
 e) $\lim_{x \rightarrow 4^+} f(x) =$ f) $\lim_{x \rightarrow 4} f(x) =$
 g) $f(2) =$ h) $f(4) =$

