

2.2 Finding Limits Graphically and Numerically

Name:

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P 1. Complete the table and use the result to estimate the limit. Use a graphing utility to confirm your result.

$$\lim_{x \rightarrow 4} \frac{x - 4}{x^2 - 3x - 4}$$

x	3.9	3.99	3.999	4	4.001	4.01	4.1
$f(x)$?			

P 2. Complete the table and use the result to estimate the limit. Use a graphing utility to confirm your result.

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

x	-0.1	-0.01	-0.001	0	0.001	0.01	0.1
$f(x)$?			

P 17. Use the graph to find the limit (if it exists). If the limit does not exist, explain why.

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

P 18. Use the graph to find the limit (if it exists). If the limit does not exist, explain why.

$$\lim_{x \rightarrow 0} \sec x$$

P 20. Use the graph to find the limit (if it exists). If the limit does not exist, explain why. Let

$$f(x) = \begin{cases} x^2 + 3, & x \neq 1 \\ 2, & x = 1 \end{cases}$$

Find

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

P 21. Use the graph to find the limit (if it exists). If the limit does not exist, explain why.

$$\lim_{x \rightarrow 2} \frac{|x - 2|}{x - 2}$$

P 22. Use the graph to find the limit (if it exists). If the limit does not exist, explain why.

$$\lim_{x \rightarrow 0} \frac{4}{2 + e^{1/x}}$$

P 23. Use the graph to find the limit (if it exists). If the limit does not exist, explain why.

$$\lim_{x \rightarrow 0} \cos \frac{1}{x}$$

P 24. Use the graph to find the limit (if it exists). If the limit does not exist, explain why.

$$\lim_{x \rightarrow \pi/2} \tan x$$