

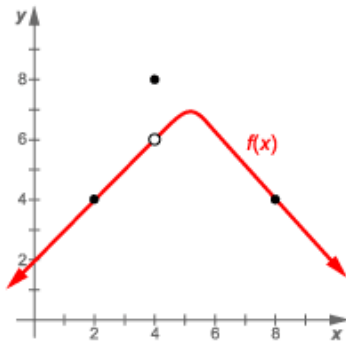
Chapter 2 Practice Test

Directions:

This is a 20-question practice test. It does not count toward your overall score, and you may take it as many times as you choose. Once you've completed a take, click on the **Guide** button in the **Results** section below for a study guide covering the questions that you missed.

1) QID: 22036

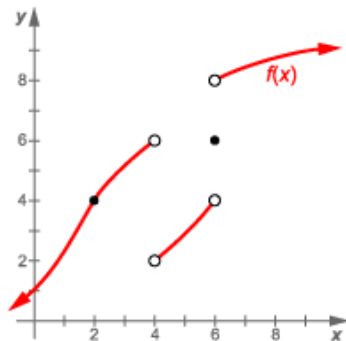
What is the limit of the function in the graph at $x = 4$?



- 8
- 2
- 6
- The limit does not exist.

2) QID: 22113

What is the limit of the function in the graph at $x = 4$?

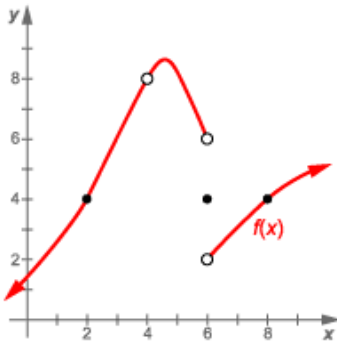


- 2
- The limit does not exist.
- 4
- 6

SAMPLE

3) QID: 26453

For what value(s) of x does the function in the graph not have a limit?



Enter your answer as $x = [\text{value}]$. For example, if the answer is 1, enter " $x = 1$ ".
If there is more than one value, separate each value with a comma (ie: " $x = 1, 2$ ").

4) QID: 70313

The velocity of the cyclist in feet per second as a function of time is given in the table below.

t	0	1	2	3	4
$f(t)$	5	10	12	11	9

The approximate acceleration (rate of change of the velocity with respect to time) of the cyclist at time $t = 2$ seconds is which of the following?

- 1 ft/s²
- 1 ft/s²
- 2 ft/s²
- $-\frac{1}{2}$ ft/s²
- None of the above

5) QID: 70315

Suppose that $\lim_{x \rightarrow 3} 2x - 1 = 5$.

Find the largest value of δ such that $|(2x - 1) - 5| < \varepsilon$ whenever $|x - 3| < \delta$, for $\varepsilon = 0.001$.

- 0.001
- 0
- 0.0005
- 0.002
- None of the above

6) QID: 70317

Suppose that $\lim_{x \rightarrow a} f(x) = 500$,

$\lim_{x \rightarrow a} g(x) = 6$, and $\lim_{x \rightarrow a} h(x) = 0.06$.

Then $\lim_{x \rightarrow a} \frac{f(x)h(x)}{g(x)}$ is equal to

which of the following?

- 5
- $\frac{f(a)h(a)}{g(a)}$
- The limit is undefined.
- The limit cannot be determined from the given information.
- none of the above

7) QID: 70319

$$f(x) = \begin{cases} 2x - 3, & x < 1 \\ x + 1, & x > 1 \end{cases}$$

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

- 2
- 0
- 1
- 5
- None of the above

8) QID: 70321

$$f(x) = \sqrt{3x - 6}$$

Evaluate $\lim_{x \rightarrow 2^+} f(x)$.

- 3
- 0
- 2
- The limit is undefined.
- None of the above

9) QID: 70323

Which of the following is a necessary and sufficient condition for a function, f , to be continuous at the point $x = 4$?

- $\lim_{x \rightarrow 4} f(x)$ exists
- $\lim_{x \rightarrow 4} f(x)$ does not exist
- $\lim_{x \rightarrow 4} f(x) = f(4)$
- f is defined on an open interval that contains $x = 4$.
- None of the above

SAMPLE

10) QID: 22032

Determine, if it exists, $\lim_{x \rightarrow 3} \frac{x^2 + 1}{x + 3}$.

- $\frac{x^2 + 1}{x + 3}$
- $\frac{10}{6}$
- ∞
- The limit does not exist.

11) QID: 22037

Determine, if it exists, $\lim_{x \rightarrow 3} \frac{x + 1}{x^2 - 9}$.

- The limit does not exist.
- $-\frac{10}{6}$
- $-\frac{4}{6}$
- $\frac{4}{6}$

12) QID: 22040

Determine, if it exists, $\lim_{x \rightarrow -2} \frac{x + 2}{x^2 - 4}$.

- The limit does not exist.
- $\frac{1}{4}$
- 1
- $-\frac{1}{4}$

13) QID: 22045

Determine, if it exists, $\lim_{x \rightarrow 3} \frac{x^2 - 6x + 9}{x^2 - 9}$.

- 1
- 1
- 0
- The limit does not exist.

14) QID: 22048

Determine, if it exists, $\lim_{x \rightarrow -2} \frac{1 + \frac{2}{x}}{x - \frac{4}{x}}$.

- $\frac{1}{4}$
- $-\frac{1}{4}$
- 1
- The limit does not exist.

15) QID: 22052

Determine, if it exists, $\lim_{x \rightarrow 3} \frac{1 - \frac{6}{x} + \frac{9}{x^2}}{1 - \frac{9}{x^2}}$.

- 0
- 1
- 3
- The limit does not exist.

16) QID: 22089

Determine, if it exists, $\lim_{x \rightarrow 4} \frac{x - 4}{\sqrt{x} - 2}$.

- The limit does not exist.
- 4
- 1
- 4

17) QID: 22094

Determine, if it exists, $\lim_{x \rightarrow 1} \frac{x^2 - 2x + 1}{\sqrt{x + 3} - 2}$.

- 1
- 2
- 0
- The limit does not exist.

SAMPLE

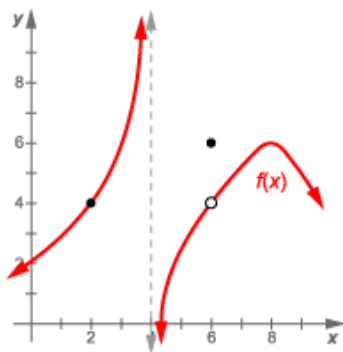
18) QID: 22030

Evaluate the following as a true or false. The limit of a function $f(x)$ at $x = 2$ is always the value of the function at $x = 2$, that is $f(2)$.

- true
- false

19) QID: 26468

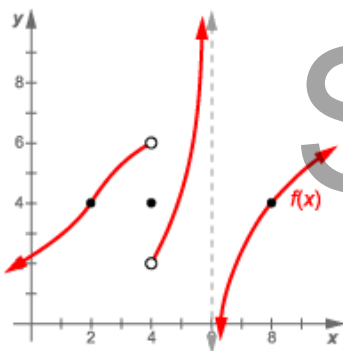
For what value(s) of x does the function in the graph not have a limit?



Enter your answer as $x = [\text{value}]$. For example, if the answer is 1, enter " $x = 1$ ".
If there is more than one value, separate each value with a comma (ie: " $x = 1, 2$ ").

20) QID: 26465

For what value(s) of x does the function in the graph not have a limit?



SAMPLE

Enter your answer as $x = [\text{value}]$. For example, if the answer is 1, enter " $x = 1$ ".
If there is more than one value, separate each value with a comma (ie: " $x = 1, 2$ ").