

MathPro Tutoring Practice Tests

This chapter test correlates with:

Calculus of a Single Variable, 8th ed.

by Larson, Hostetler, Edwards

Houghton Mifflin, 2006

Calculus with Analytic Geometry, 8th ed.

or by Larson, Hostetler, Edwards

Houghton Mifflin, 2006

Chapter 1: Limits and Their Properties

[Also:
7th edition, Chapter 1
6th edition, Chapter 1]

A few notes:

- If you are using a different textbook, this may not be a comprehensive chapter test for you.
- Solutions are available at www.mathprotutoring.com/tests.
- Angle measures are represented using radian measure, unless there is a pressing reason to use degree measure. If degree measure is used, there will always be a ° symbol.
- This test is copyright material. You must obtain express written permission from Linda Sinclair (linda@mathprotutoring.com) in order to duplicate and/or share this test with others.
- Please check www.mathprotutoring.com/tests soon for new tests. New ones will be added just as quickly as they are created.

Calculus Chapter 1 Test Limits and Their Properties

Evaluate each limit.

1. $\lim_{x \rightarrow -5} \frac{x+2}{x+7}$.

2. $\lim_{x \rightarrow 6} \frac{2x-12}{x-6}$.

3. $\lim_{x \rightarrow -1} \frac{x^2-3x-4}{x+1}$.

4. $\lim_{x \rightarrow 4} \frac{x^2+3x+9}{x-4}$.

5. $\lim_{x \rightarrow -5^-} \frac{3x^2-x-4}{x+5}$.

6. $\lim_{x \rightarrow 3^+} \frac{x^3}{x+5} =$

7. $\lim_{x \rightarrow \pi} \frac{\cos x}{x}$.

8. $\lim_{x \rightarrow -3} \frac{\sin(x+3)}{x+3}$.

9. $\lim_{x \rightarrow 0} \frac{3 \cos x \sin x}{2x}$.

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

11. $\lim_{x \rightarrow 1/2^+} (3 + \sqrt{2x-1})$.

12. $\lim_{x \rightarrow 4} \frac{\sqrt{x}-2}{x-4}$.

Find all vertical asymptotes of the function.

13. $f(x) = \frac{x+4}{x^2+5x+4}$

14. $f(x) = \frac{x^2+x}{x^2+1}$

Find the value(s) of x for which $f(x)$ is discontinuous. State whether each discontinuity is removable or nonremovable.

15. $f(x) = \frac{x-3}{x^2-9}$

16. $f(x) = \tan x$

17. Find the value of a so that $f(x)$ is continuous for all real numbers.

$$f(x) = \begin{cases} (x+2)^2, & x \leq -1 \\ x+a, & x > -1 \end{cases}$$

18. Draw the graph of $f(x) = \frac{x^2-16}{x+4}$.