

## MathPro Tutoring Practice Tests

This chapter test correlates with:

Calculus of a Single Variable, 8<sup>th</sup> ed.

by Larson, Hostetler, Edwards

Houghton Mifflin, 2006

Calculus with Analytic Geometry, 8<sup>th</sup> ed.

or by Larson, Hostetler, Edwards

Houghton Mifflin, 2006

Chapter 5, Part 2: Sections 5.5-5.7 (5.8 omitted)

Bases Other than  $e$ , Inverse Trigonometric Functions: Differentiation and Integration

[ Also:  
7<sup>th</sup> edition, Sections 5.5, 5.8, 5.9, and part of 5.6  
6<sup>th</sup> edition, Sections 5.5, 5.8, 5.9, and part of 5.6 ]

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](http://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  $^\circ$  symbol.
- This test is copyright material. You must obtain express written permission from Linda Sinclair ([linda@mathprotutoring.com](mailto:linda@mathprotutoring.com)) in order to duplicate and/or share this test with others.
- Please check [www.mathprotutoring.com/tests](http://www.mathprotutoring.com/tests) soon for new tests. New ones will be added just as quickly as they are created.

Calculus                      Ch. 5 Part 2: Sections 5.5-5.7

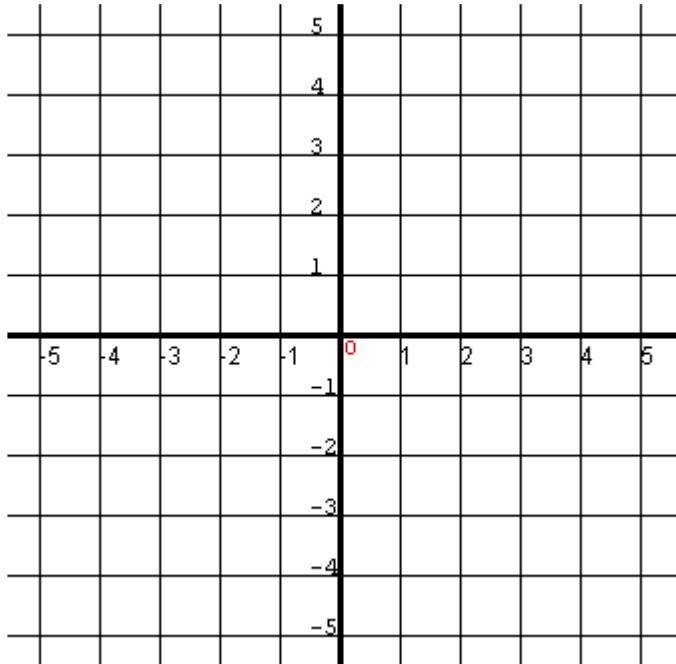
Questions 1-3: Evaluate each expression.

1.  $\log_9 3$

2.  $\arccos \frac{\sqrt{3}}{2}$

3.  $\tan(\arccos 2x)$  (Your answer should be an algebraic expression.)

4. Sketch the graph of  $y = 3^{x+1}$ . Label intercepts and asymptotes.



5. Solve the equation.  $\log_2 \sqrt{x-7} = 3$

Questions 6-9: Find the derivative.

6.  $f(x) = \frac{6^{-x}}{x^2}$

7.  $y = \log_3 \left( \frac{x-3}{x^2-2} \right)$

8.  $y = x^{\cos x}$

9.  $h(t) = \arccos(t^2)$

Questions 10-15: Find the indefinite integral.

10.  $\int x(3^{x^2}) dx$

11.  $\int \frac{2^{5x}}{2^{5x} + 3} dx$

12.  $\int \frac{dx}{\sqrt{9 - x^2}}$

13.  $\int \frac{dx}{x^2 + 6x + 13}$

14.  $\int \frac{x-1}{x^2 + 2x + 2} dx$

15.  $\int \frac{5^{2/x}}{x^2} dx$

16. \$10,000 is invested at a rate of 7% for 8 years. Find the value of the investment at the end of the 8 years if the interest is compounded

a. monthly.

b. continuously.

17. Find the area of the region enclosed by the graph of  $y = 2^{\tan x} \sec^2 x$ , the  $x$ -axis, and the lines  $x = -\frac{\pi}{4}$  and  $x = \frac{\pi}{4}$ .

18. Find the equation of the tangent line to the graph of  $y = \log_2(x^3)$  at the point where  $x = 2$ .