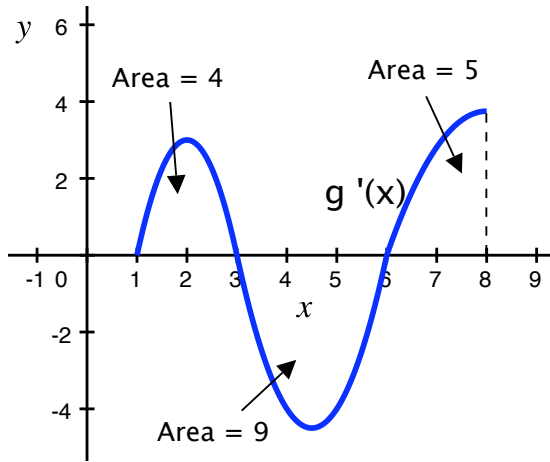


**Math 148 Quiz #7**  
**August 10, 2010**

Name: \_\_\_\_\_

Show all work and answers on a separate sheet with a box around your final answer. Calculators are permitted.

1. (7 pts.) The following graph gives the **derivative** function  $g'(x)$  of some unknown function  $g(x)$ . Use it to answer questions about  $g(x)$  in parts (a) and (b) below.



- (a) (2 pts.) Find the critical numbers of  $g(x)$ .  
Classify each as a local maximum or minimum or neither.
- (b) (5 pts.) Suppose  $g(1) = 2$ . Give the global maximum and minimum **values** of  $g(x)$  on the interval  $1 \leq x \leq 8$  **and** state at which  $x$ -values they occur.

2. (6 pts.) Find the present value and future value of an income stream of \$500 each year (invested continuously) for 15 years at a rate of 10% compounded continuously. Include units in your answer.

3. (7 pts.) Consider the function  $f(x, y) = e^{3x^2} + 4xy$  in parts (a) and (b) below.

(a) (1 pts.) Find  $f(2, 5)$ .

(b) (6 pts.) Find the values of the partial derivatives  $f_x(2, 5)$  and  $f_y(2, 5)$ .