

Name: \_\_\_\_\_  
Group Members Present: \_\_\_\_\_

Grade: \_\_\_\_\_

\_\_\_\_\_, \_\_\_\_\_, & \_\_\_\_\_

1.  $g(t)$  hundred computers is the number of computers sold  $t$  months after the introduction of a new model.  
 $p(t)$  dollars/computer is the retail price of the new model computer  $t$  months after the introduction of a new model.  
 $R(t) = g(t) \cdot p(t)$  is the revenue function for sales of the new model computer.

a. Write the units of measure for each of the following quantities.

- $g(3) = 85.5$  \_\_\_\_\_
- $g'(3) = 27$  \_\_\_\_\_
- $p(3) = 1894$  \_\_\_\_\_
- $p'(3) = -204$  \_\_\_\_\_

b. Use the information in part a to calculate the following quantities.

- $R(3) =$
- $R'(3) =$

c. Calculate the percentage rate of change of revenue when  $t = 3$ .

2.  $f(x) = 13x^2 + 4x + 1.3$  and  $g(x) = 2(3^x)$

a.  $(f \cdot g)(2) \approx$

b.  $\frac{d(f \cdot g)}{dx} =$

c.  $\left. \frac{d(f \cdot g)}{dx} \right|_{x=2} \approx$

3.  $f(x) = x + 5$  and  $g(x) = 5 \ln x$

a.  $(f \cdot g)(2) \approx$

b.  $\frac{d(f \cdot g)}{dx} =$

c.  $\left. \frac{d(f \cdot g)}{dx} \right|_{x=2} \approx$