Name

8-1A Lesson Master

Questions on SPUR Objectives
See Student Edition pages 574–577 for objectives.

SKILLS Objective A

1. Suppose $f(x) = 4x^2$ and $g(x) = x + 7$.

   a. Evaluate $f(g(3))$. _____ b. Evaluate $g(f(3))$. _____

   c. Based on Parts a and b, is composition of functions commutative? _____

2. Suppose $p(a) = a^3$ and $q(a) = 4a - 7$. Evaluate the expression.

   a. $p \circ q(4)$ _____ b. $q \circ q(4)$ _____

3. Suppose $u(x) = \frac{9}{x}$ and $v(x) = 2x - 8$.

   a. Evaluate $u(v(x))$. _____

   b. **Fill in the Blank** The domain of $u(v(x))$ is _____.

   c. Evaluate $v(u(x))$. _____

   d. **Fill in the Blank** The domain of $v(u(x))$ is _____.

USES Objective H

4. Two different stores sell the same computer printer. Store A offers a \$50 in-store discount; Store B offers a \$50 mail-in rebate. The local sales tax is 7% on the price you pay in the store. Let x be the original price.

   a. Write an equation $r(x)$, the price after the discount if the discount is taken first, for Store A. _____

   b. Write an equation $t(x)$, the price after the sales tax if the tax is calculated before the rebate for Store B. _____

   c. Find $r(t(\$269))$. _____ d. Find $t(r(\$269))$. _____

   e. Which store's final price is represented by $t(r(x))$? _____

5. The Dubows are installing a brick patio. The bricks they choose are 4 inches by 8 inches. They have several different patio designs to choose from.

   a. If a design covers an area of F square feet, write an equation for $n(F)$, the number of bricks they will need. _____

   b. If the cost of building the patio is \$1200 for labor plus \$0.69 per brick, write an equation for $c(B)$, the cost of building a patio with B bricks. _____

   c. Find the cost of building a patio that covers F square feet. _____