Name

3-2 Lesson Master

Questions on SPUR Objectives
See Student Edition pages 216–219 for objectives.

SKILLS Objectives B and C

In 1–4, formulas for real functions *p* and *q* are given. Find an equation for and the domain of

a. $p \circ q$. b. $q \circ p$.

1. $p(x) = x^2, q(x) = \log x$

   a. _____ b. _____

2. $p(x) = |x|, q(x) = \sqrt{-x}$

   a. _____ b. _____

3. $p(x) = \frac{(x+2)(3x-1)}{x-3}, q(x) = \frac{1}{x^2}$

   a. _____

   b. _____

4. $p(x) = x^3 - 2x + 4, q(x) = 2e^x$

   a. _____ b. _____

5. Let $f(x) = e^x$ and $g(x) = \ln x$.

   a. Find an equation for $f \circ g$ and give its domain. _____

   b. Find the domain of $h : x \rightarrow x$. _____

   c. Explain why your answers to Parts a and b are not the same.

   _____

In 6–9, an equation for the composite of two functions *m* and *n* is given. Identify possible equations for *m* and *n*.

6. $m \circ n(x) = e^{2x+1}$ _____

7. $m \circ n(t) = \sin^2 t + 4$ _____

8. $m \circ n(x) = \sqrt{\log_2 x}$ _____

9. $m \circ n(x) = (2x - 12)^5$ _____

10. Let $f(x) = |\cos(4^x)|$. Write f as the composite of

    a. two simpler functions. _____

    b. three simpler functions. _____