Name _____

5-5 Reteach to Build Understanding

Function Operations

1. Complete the table to practice each operation.

	Step 1: Rule	Step 2: Equations	Step 3: Set Up	Step 4: Answer
Add	$f(x) + g(x)$	$f(x) = x - 11$ $g(x) = 2x + 11$	$x - 11 + 2x + 11$	$= \_x$
Subtract	$f(x) - g(x)$	$f(x) = 4x + 8$ $g(x) = 2x + 5$	$4x + 8 - (2x + 5)$ $4x + 8 - 2x - 5$	$= \_x + \_$
Multiply	$f(x) \cdot g(x)$	$f(x) = x - 3$ $g(x) = 2x + 2$	$(x - 3)(2x + 2)$ $2x^2 + 2x - 6x - 6$	$= \_x^2 - \_x - \_$
Divide	$\dfrac{f(x)}{g(x)}$	$f(x) = x^2 + 6x + 8$ $g(x) = x + 4$	$\dfrac{x^2 + 6x + 8}{x + 4}$	$= x + \_$
Compose	$f(g(x))$	$f(x) = 2x + 3$ $g(x) = 3x + 2$	$2(3x + 2) + 3$ $6x + 4 + 3$	$= \_x + \_$

2. Fatima was asked to write the rule for $f \circ g$. She set it up as $f(x) \cdot g(x)$. What error did she make? Choose the correct answer.

   a. She set up the rule for multiplying the two equations.

   b. She set up the rule for adding the two equations.

   c. She set up the rule for dividing the two equations.

   d. She set up the rule for subtracting the two equations.

   How should she have set it up? Choose the correct answer.

   a. When composing them, she should have set them up as $\dfrac{f(x)}{g(x)}$.

   b. When composing them, she should have set them up as $f(x) - g(x)$.

   c. When composing them, she should have set them up as $f(g(x))$.

   d. When composing them, she should have set them up as $f(x) + g(x)$.

3. What is the rule for the composition $f \circ g$?

   $f(x) = \sqrt{x - 3}$ and $g(x) = 2x + 4$

   $f \circ g = f(g(x))$

   $= f(2x + \_\_)$

   $= \sqrt{(2x + 4) - \_\_}$

   $= \sqrt{\_\_ x + \_\_}$ Domain: $x \geq -\dfrac{1}{2}$