Homework 3 Different Ways to Say the Same Thing

Applying Skills

Tell whether the two expressions in each pair are equivalent.

1. xy and yx **2.** $3(a + b)$ and $3a + b$

3. $2x - y$ and $y - 2x$

4. $5(a - b)$ and $5a - 5b$

5. $x - 2y$ and $-2y + x$

6. $6(a + b) + a$ and $7a + 6b$

7. $2x + 3y$ and $5x$

8. $\frac{x}{y}$ and $\frac{y}{x}$ **9.** $\frac{1}{3}x$ and $\frac{1}{3x}$

10. Which expressions are equivalent to the expression $2(x - y)$?

a. $2y - 2x$ **b.** $2x - 2y$

c. $2x - y$ **d.** $x + x - 2y$

11. Which expressions are equivalent to the expression $2a + 5(b - a)$?

a. $2a + 5(a - b)$ **b.** $5b - 3a$

c. $a + 5b$ **d.** $-3a + 5b$

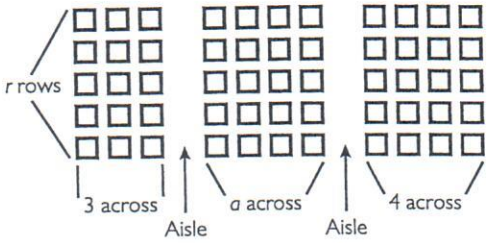
12. Which expressions are equivalent to the expression $3x + 2y - x$?

a. $2x + 2y$ **b.** $2y + 2x$

c. $2(x + y)$ **d.** $4x$

Extending Concepts

13. The seats in a certain type of airplane are arranged as shown. The number of rows, r, and the width of the middle section, a, vary from plane to plane.



a. Write an equation for the total number of seats, s, on an airplane. Your equation should tell how s is related to r and a.

b. Write at least two different equations equivalent to your equation in part **a.**

c. Check that your equations are equivalent by substituting values for a and r. Show your work. Use at least three different pairs for a and r.

Writing

14. Answer the letter to Dr. Math.

Dear Dr. Math:

I wanted to test the equivalence of the expressions $x(y - 1)$ and $xy - 1$. I decided to substitute values for x and y. I picked $x = 1, y = 2$. For both expressions, the result was 1. Then I picked $x = 1, y = 5$. For both expressions, the result was 4. So then I figured that the expressions must be equivalent. Am I right?

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