SOL Mini-Challenge **Equations and Inequalities**
A.1, A.3

Read and solve.

1. Which property justifies the statement "If 3a + 3b = 12, then 3(a + b) = 12" ?

   A. Commutative property of multiplication
   B. Distributive property for multiplication over addition
   C. Multiplicative identity property
   D. Associative property of addition

2. Which is a solution to (2x + 3) = 25?

   F. -4
   G. -2
   H. 2
   J. 11

3. Kristy is making a rectangular quilt that is 2 feet longer than it is wide. If the perimeter of the quilt is to be 32 feet, what will be its dimensions?

   A. 4 ft by 8 ft
   B. 5 ft by 7 ft
   C. 7 ft by 9 ft
   D. 15 ft by 17 ft

4. What is the solution to $2x + 3 \geq x - 5$?

   F. $x \geq \frac{-8}{3}$

   G. $x \geq -8$

   H. $x \geq \frac{-2}{3}$

   J. $x \geq -2$

5. What is the value of x if $-3x - 4 = 4x + 10$?

   A. 2
   B. $-\frac{6}{7}$
   C. -2
   D. -14

SOL Mini-Challenge—continued

6. What is the solution to $-2x + 6 \geq 3x - 4$?

F. $x \geq -2$
G. $x \geq 2$
H. $x \leq -2$
J. $x \leq 2$

7. What is the solution to $2(-3x + 4) = 4(-2x + 6)$?

A. -8
B. -1
C. 1
D. 8

8. What is the solution to $2(4 - x) > 5x + 8$?

F. $x < -8$
G. $x < 0$
H. $x > 0$
J. $x > 8$

9. Which statement is *always* true?

A. $4 + a = 4 \times a$
B. $a + (-4 + 4) = a + 0$
C. $a \div 4 = 4 \div a$
D. $4 - a = a - 4$

10. If $A < B$, which of the following statements *cannot* be true?

F. $A + C < B + C$
G. $A - C < B - C$
H. $AC < BC$
J. $-A < -B$