Inequalities (Basic)

1. Which of the following inequalities orders the numbers $.23$, $\frac{2}{7}$, and $\frac{1}{4}$ from least to greatest?

   A. $\frac{2}{7} < .23 < \frac{1}{4}$

   B. $\frac{2}{7} < \frac{1}{4} < .23$

   C. $.23 < \frac{1}{4} < \frac{2}{7}$

   D. $\frac{1}{4} < .23 < \frac{2}{7}$

   E. $\frac{1}{4} < \frac{2}{7} < .23$

2. The solution set of $4x - 2 \geq -14$ is the set of all real values of x such that:

   A. $x \leq -4$

   B. $x \leq -3$

   C. $x \geq -3$

   D. $x \geq 3$

   E. $x \geq 4$

3. To produce authentic footballs, it costs Acme Supply Company $5,700.00 for overhead, plus $6.50 per football produced. What is the maximum number of balls that can be produced by the company for $28,000?

   A. 2,430

   B. 3,430

   C. 4,330

   D. 4,430

   E. 5,030

4. What is the greatest integer solution to $4x - 8 \leq 20.3$?

   A. 4

   B. 5

   C. 6

   D. 7

   E. 8

5. If n is an integer, which of the following must be true?
   A. $n \geq n^3$
   B. $n \leq \sqrt{n}$
   C. $n \leq \frac{1}{n}$
   D. $n \geq \sqrt{n+1}$
   E. $n \geq n - 1$

6. Which of the following is equivalent to the inequality
   $-2x + 4y > -2y - 4$?
   A. $x < 3y - 2$
   B. $x < 3y + 2$
   C. $x > 3y - 2$
   D. $x > 3y + 2$
   E. $x > -3y + 2$

7. Which of the following is equivalent to the inequality
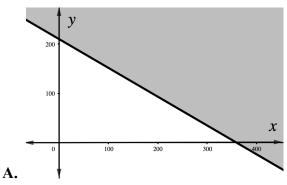 $3x - 9 > 10x + 12$?
   A. $x < -3$
   B. $x > -3$
   C. $x > 3$
   D. $x < 3$
   E. $x < 7$

8. What is the set of all integer solutions for the inequality
   $1 \leq x - \sqrt{3} < 4$?
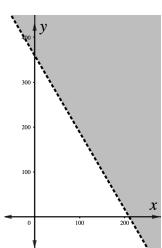   A. $\{1, 2, 3, 4\}$
   B. $\{2, 3, 4\}$
   C. $\{1, 2, 3, 4, 5\}$
   D. $\{2, 3, 4, 5\}$
   E. $\{3, 4, 5\}$

9. The set of all values of x that satisfies $|x - 3| < 8$ is the
   same set of all values x that satisfies:
   A. $-11 < x < 11$
   B. $0 < x < 11$
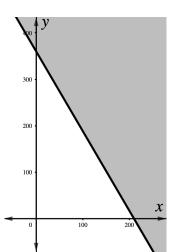   C. $-5 < x < 11$
   D. $-11 < x < 5$
   E. $0 < x < 5$

10. Tickets for the championship football game are $12.00 for adults and $7.00 for students. To cover expenses, a total of $2,520.00 must be collected from ticket sales for the game. Which of the following graphs in the standard (x, y) coordinate plane, where x is the number of adult tickets sold and y is the number of student tickets sold, represents all of the possible combinations of tickets sales that will cover expenses?

A.

D.

B.

E.

C.