

Date Completed: _____
Mentor Initials: _____

A mentor can change everything.



Inequalities (Basic)

- Which of the following inequalities orders the numbers $.23$, $\frac{2}{7}$, and $\frac{1}{4}$ from least to greatest?
 - $\frac{2}{7} < .23 < \frac{1}{4}$
 - $\frac{2}{7} < \frac{1}{4} < .23$
 - $.23 < \frac{1}{4} < \frac{2}{7}$
 - $\frac{1}{4} < .23 < \frac{2}{7}$
 - $\frac{1}{4} < \frac{2}{7} < .23$
- The solution set of $4x - 2 \geq -14$ is the set of all real values of x such that:
 - $x \leq -4$
 - $x \leq -3$
 - $x \geq -3$
 - $x \geq 3$
 - $x \geq 4$
- 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?
 - 2,430
 - 3,430
 - 4,330
 - 4,430
 - 5,030
- What is the greatest integer solution to $4x - 8 \leq 20.3$?
 - 4
 - 5
 - 6
 - 7
 - 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?

