8 Algebra CC
Unit 5 Review (Inequalities)

Important Terminology

Inequality   Properties of Inequality   Solution Set   Interval Notation
Compound Inequality   AND   OR

What should I be able to do?
1. Solve simple inequalities and represent their solution sets graphically and using interval notation
2. Solve compound inequalities and represent their solution sets graphically and using interval notation
3. Write inequality statements to represent situations
4. Solve problems by writing, solving and interpreting solution sets of inequalities
5. Identify the properties of inequalities used when solving an inequality

<u>**Practice Problem Set**</u>
For each inequality below, represent the solution set **graphically** and using **interval notation**.

1. $10 - a \leq -15$ 2. $2x + 5 > 11 - 4x$ 3. $1 > 2y + 6$

For each compound inequality below, represent the solution set **graphically** and using **interval notation**.

4. $x > -6$ and $x \leq 0$ 5. $-3 \leq x \leq 2$ 6. $x > 5$ and $x \leq -1$

7. x < 4 or x > 7   8. x ≤ -2 or x ≥ 9   9. x > -6 or x ≤ - 3

For each compound inequality below, **solve** the inequality and represent the solution set **graphically** and using **interval notation**.

10. 2x + 5 > 11 and -3x + 3 ≥ -27   11. 4x – 1 < 7 or 2x > 16

12. Consider the compound inequality statements below.

   a)   x > 2 and x ≤ 5   b) x < 2 or x ≥ 5

   Are the following values of **x** part of the solution set? <u>Explain</u>.   **x = 4**   **x = 6**

   a)

   b)

For each problem below, write an inequality statement to represent the situation. Solve the inequality and answer the question. Remember to define unknown(s) algebraically.

13. Jessica's family is on vacation at the Outer Banks. She is going to buy dinner at a local seafood distributor. She can buy shrimp at $8.50 per pound and crab cakes for $3 each. She has $45 to spend and must buy 3 pounds of shrimp. What is the largest quantity of crab cakes that she can buy?

14. Greg's summer savings account currently has a balance of $675. Once a week during his summer vacation, he plans to withdraw $50 for fun activities with friends. If no other transactions are performed on the account, how many weeks can he withdraw money if by the end of the summer he wants to have at least $200 remaining in the account?