Inequalities are statements in which two amounts are not equal. There are four symbols used when writing inequalities. < means less than; > means greater than; ≤ means less than or equal to; and ≥ means greater than or equal to. Steps for solving inequalities are:

- Keep the inequality in balance. Whatever operation you perform on **one side** of the inequality, you must perform the exact same operation on the **other side** of the inequality.
- Concentrate on the variable. Your goal is to isolate the **variable** (unknown) on one side of the inequality.
- Perform **opposite operations** to isolate the variable**.** First, do any addition and subtraction; then do multiplication and division.
- Remember to **reverse the direction** of the inequality sign when you **multiply** or **divide both sides** of an inequality by a **negative** number.

Solve the following inequalities. Select the best answer and type it on the line provided.

1. $8x < 24$ Answer: _____

2. $4x - 5 > 11$ Answer: _____

3. $-3x \geq -15$ Answer: _____

4. $\frac{x}{4} > 8$ Answer: _____

5. $2x - 6 \geq 4x$ given the range $-3 \geq x$ **or** $x \leq -3$ Answer: _____

6. Select the inequality that describes: A number divided by 6 is greater than or equal to -30. _____

   a. $\frac{x}{6} \geq -30$

   b. $\frac{x}{6} \leq -30$

   c. $\frac{6}{x} \geq -30$

   d. $\frac{6}{x} \leq -30$

7. Solve the inequality for y: 6y + 3 > 5y – 4 _____

   a. y > 7
   b. y < 7
   c. y > -7
   d. y < -7

8. Solve the inequality for n: $n + 8n + 13 < 4(n + 2)$ _____

a. $n > 1$
b. $n < 1$
c. $n > -1$
d. $n < -1$