**Addition, Subtraction, Multiplication and Division Inequalities using one-step and two-step’s**

**<** Less Than

**>** Great Than

**≤** Less Than or Equal to

**≥** Great Than or Equal to

\*\*\*USE THE NUMBER LINE TO SOLVE INEQUALITY PROBLEMS:

**🡨(-7)—(-6)—(-5)—(-4)—(-3)—(-2)--(-1)—0—1—2—3—4—5—6—7🡪**

**Note:** Remember 🡪 There are **two sides** to an inequality answer. You must **compare both sides** to **determine** if the value for the variable **makes it true**.

Ex (1): Addition inequality Ex (2): Subtraction inequality

 x + 10 > 12 b – 14 < 13

 – 10 -10 🡨Inverse Operation🡪 + 14 +14

 x + 0 > 2 🡪 **x > 2** b + 0 < 27 🡪 **b < 27**

Ex (3): Multiplication inequality Ex (4): Division inequality

**Positive** (Coefficient) **Negative** **Positive** (Coefficient)  **Negative**

5y < -15 -7z > 28 $\frac{f}{9} > -3$ $-\frac{e}{8} < 2$

5 5 -7 -7 $\left(9\right)\left(\frac{f}{9}\right)>\left(9\right)(-3)$ $\left(-8\right)\left(-\frac{e}{8}\right)<\left(-8\right)(2)$

 **y < -3**   **z < -4**   **f > -27 e > -16**

Ex (5): Two-Step Multiplication Ex (6): Two-Step Division

4x – 14 < 30 $-\frac{p}{3} + 6 > 36$

 + 14 +14 – 6 - 6

4x + 0 < 44 $-\frac{p}{3} + 0 > 30$

 4x < 44 $-\frac{p}{3} > 30$

 4 4 $\left(-3\right)\left(-\frac{p}{3}\right)>\left(-3\right)(30)$

  **x < 11**   **p < -90**