Video #2 NOTES Multi-step inequalities and compound inequalities

Unlike equations, inequalities use the following math symbols: $<$, $>$, $\geq$, $\leq$

Two unique facts: ***inequalities are graphed on a number line as part of the solution and

***when multiplying or dividing by the negative number the sign of the inequality statement changes directions.

Inequalities

1) $2x - 3 > 7$ 2) $-10p > 6p - 8$ 3) $6x - 7 \geq 2x + 17$

Special cases

4) $14x + 5 < 7(2x - 3)$ 5) $12x - 1 > 6(2x - 1)$

Compound Inequalities "and" and "or"

AND

6) $-5 \leq x - 3 \leq 2$ 7) $2x + 3 < 9$ or $3x - 6 > 12$

Absolute value equations and inequalities

Absolute value is defined as the distance from zero or "the origin" in both directions

$|5| = 5$ $|-5| = 5$ Both 5 and – 5 are 5 units (distance) away from zero.



You can solve absolute value equations and inequalities.

1. $|x| = 7$
2. $|a + 6| = 2$
3. $2|x - 3| + 1 = 5$

4. $|m| \leq 8$
5. $|2y - 9| - 2 > 10$
6. $5|d + 8| - 7 > 13$