



Writing & solving inequalities

Many answers, not one

- Today: solve inequalities, and know when the sign reverses.

$$-2x > 6$$

- Solve it.

Turn & talk: is it $x > -3$ or $x < -3$?

Don't remember — TEST

- Boundary: $6 \div (-2) = -3$.
- $x = -4$: $-2(-4) = 8$, and $8 > 6 \rightarrow \text{TRUE}$
- $x = 0$: $0 > 6 \rightarrow \text{FALSE}$

Solutions are **BELOW** -3

- -4 works and is below. 0 fails and is above.
- So $x < -3$ — the sign reversed.

Two tests beat one remembered rule.

When does it flip?

- ONLY when multiplying or dividing by a NEGATIVE.
- Adding or subtracting a negative changes nothing.

Flipping every time is as wrong as never flipping.

Your turn

- Solve $5x - 3 \leq 12$. Is $x = 3$ a solution?
- Thumbs up when you have it.

The set, and the answer

- $8 + 4v \leq 32$ gives $v \leq 6$ — infinitely many values.
- “How many visits can they afford?” wants ONE: 6.

Solve for the set. Then answer the question that was asked.

Now you

- → In-class practice sheet