

Algebra 1

5.3

\*7th grade standard

Solve multi-step linear inequalities\*  $<$   $>$

Use the distributive property to solve linear inequalities\*

order of operations

distributive property

inequality

empty set

all real numbers

Whiteboards

Triangle puzzle

## Whiteboards

### Example 2 Inequality Involving a Negative Coefficient

Solve  $-11y - 13 > 42$ . Graph the solution on a number line.

$$\begin{aligned} &+13 \quad +13 \\ \frac{-11y}{-11} &> \frac{55}{-11} \\ y &< -5 \end{aligned}$$

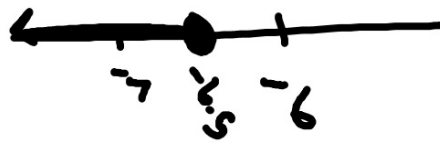


$$2A. 23 \geq 10 - 2w$$

$$\frac{-10 \quad -10}{\quad}$$

$$\frac{13 \geq -2w}{-2 \quad -2}$$

$$-6.5 \leq w$$



**2B.**  $43 > -4y + 11$

Square puzzle

**Guided Practice**

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3. Two more than half of a number is greater than twenty-seven.

$$\begin{array}{r} \frac{1}{2}n + 2 > 27 \\ -2 \quad \quad -2 \\ \hline \frac{1}{2}n > 25 \\ \cdot 2 \quad \cdot 2 \\ n > 50 \end{array}$$

#### Example 4 Distributive Property

Solve  $4(3t - 5) + 7 \geq 8t + 3$ . Graph the solution on a number line.

$$12t \underbrace{-20 + 7} \geq 8t + 3$$

$$\begin{array}{r} 12t - 13 \geq 8t + 3 \\ -8t + 13 \quad -8t + 13 \\ \hline \end{array}$$

$$\frac{4t}{4} \geq \frac{16}{4} \quad t \geq 4$$



**4A.**  $6(5z - 3) \leq 36z$



**4B.**  $2(h + 6) > -3(8 - h)$

**b.**  $3(4m + 6) \leq 42 + 6(2m - 4)$

**Solve each inequality. Check your solution.**

**5A.**  $18 - 3(8c + 4) \geq -6(4c - 1)$

**5B.**  $46 \leq 8m - 4(2m + 5)$

