

Bell Work

Solve for x:

$$20 = \frac{4x}{3} + 12$$

From last time... [10ish minutes to finish]

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ALGEBRA 3

Day 8



Chapter 1 Section 5

Solving Inequalities

Objective: To solve with $>$, $<$, \geq , or \leq
instead of an $=$ in the problem

Quick Review of Equations

- Describe how you would identify the solution for the following equation:

$$y = 2x + 4$$

Follow Up Questions:

What does the graph look like? What does it mean?

What really changes if we make it $y \geq 2x + 4$??

What does this graph look like now?

1.5 Solving Inequalities

- **Linear Inequality:** linear equation with inequality symbol ($<$, $>$, \geq , \leq) instead of the equals sign ($=$)

Note: Compound Inequalities have two inequality symbols

Solution to an Inequality: value of the variable that makes the inequality true

Solve the same way you normally would with an $=$ sign except....

If you have to *Multiply or Divide* both sides by the same *negative* number, then you must *reverse* the inequality.

WHY does this rule exist?!? How else could we solve??

Examples

Solve and Graph the Following:

1.) $5 - 2x \leq 17$

2.) $\frac{2n}{5} - 3 \geq 7$ or $-\frac{n}{3} + 4 > 9$

3.) $1 \leq 2x - 5 \leq 7$

Quick Check for Understanding

- How would you describe the difference in your solution if there is a
 $>$, $<$ compared to a \geq , \leq ?
- How does your answer change if there are multiple inequalities instead of just one in the problem?

For Next Time...

From Today

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Mixed Review

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