12-5 Solving Inequalities by Adding and Subtracting

p. 696 1-31-18

Feb 11-8:56 AM

When you add or subtract the same number on both sides of an inequality, the resulting statement will still be true.

$$-2 < 5$$
$$+7 \quad +7$$
$$5 < 12$$

You can find solution sets of inequalities the same way you find solutions of equations, by isolating the variable.

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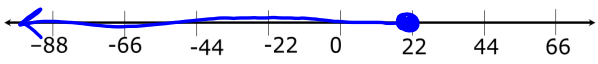
Solve. Then graph the solution set on a number line.

***n* – 7 ≤ 15**

+7 +7

$n \leq 22$ solution set



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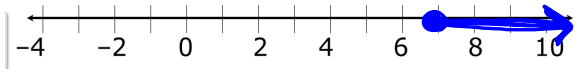
Solve. Then graph the solution set on a number line.

***a* – 10 ≥ –3**

+10 +10

$a \geq 7$



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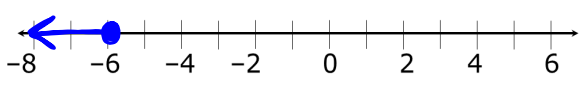
Solve. Then graph the solution set on a number line.

***d* – 12 ≤ –18**

+12 +12

$d \leq -6$



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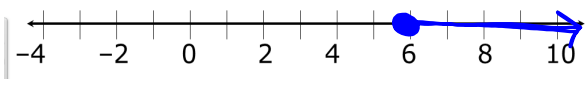
Solve. Then graph the solution set on a number line.

***b* – 14 ≥ –8**

+14 +14

$b \geq 6$



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You can check the solution to an inequality is true by choosing any number in the solution set and substituting it into the original inequality.

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Solve. Check each answer.

$d + 11 > 6$

$-11 \quad -11$

$d > -5$

$0 + 11 > 6$

$11 > 6$ ✓

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Solve. Check your answer.

$b + 12 \leq 19$

$-12 \quad -12$

$b \leq 7$

$0 + 12 \leq 19$ ✓

$7 + 12 \leq 19$

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Solve. Check your answer.

$a + 15 \leq 20$

$-15 \quad -15$

$a \leq 5$

$0 + 15 \leq 20$ ✓

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