

# Solving Inequalities with Addition and Subtraction

Many inequalities are solved in much the same way equations are. To solve an inequality, you can add or subtract the same amount from both sides without changing its solution.

Solve:  $x + 8 < 18$

$$\begin{array}{r} x + 8 < 18 \\ -8 \quad -8 \\ \hline \end{array}$$

$$x < 10$$

Subtract 8 from both sides.

Solve:  $15 \geq x - 5$

$$\begin{array}{r} 15 \geq x - 5 \\ +5 \quad +5 \\ \hline \end{array}$$

$$20 \geq x$$

Add 5 to both sides.

Solve.

1.  $x - 4 > 12$

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2.  $x - 9 \leq 6$

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3.  $17 > x - 8$

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4.  $x + 3 \leq 10$

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5.  $16 < x + 13$

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6.  $11 \leq x + 5$

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7.  $5 < x - 10$

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8.  $36 \geq 12 + x$

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9.  $x - 9 > 14$

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10.  $16 + x > 40$

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11.  $x - 6 \geq 19$

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12.  $55 \leq x + 20$

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13.  $x + 7 < 5$

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14.  $x + 6 \geq 2$

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15.  $10 > x + 1$

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16.  $10 \geq 8 + x$

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17.  $14 > 6 + x$

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18.  $x + 8 \leq 3$

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