

Math Sheet

Name _____ Score _____ / 10 Teacher _____ Date _____

Two-Step Inequalities

Solve each inequality. Show your work and graph the solution.

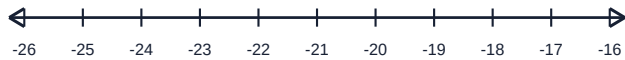
1. $-9m + (-8) \leq -53$



6. $2 < 6 + \frac{q}{5}$



2. $-1 + \frac{y}{7} < -4$



7. $-148 < -6n + (-10)$



3. $8q + (-5) \geq 43$



8. $-5 > -12 + \frac{x}{9}$



4. $10 + \frac{y}{-7} > 20$



9. $15 \leq 3y + (-9)$



5. $9z + 3 \geq 129$



10. $-15 > -11 + \frac{y}{-8}$



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Two-Step Inequalities

Answer key

Solve each inequality. Show your work and graph the solution.

1. $-9m + (-8) \leq -53$

$$-9m - 8 \leq -53$$

Simplify each side.

$$-9m \leq -45$$

Move constants to the other side.

$$m \geq 5$$

Divide by a negative coefficient and reverse the inequality direction.



2. $-1 + \frac{y}{7} < -4$

$$\frac{1}{7}y - 1 < -4$$

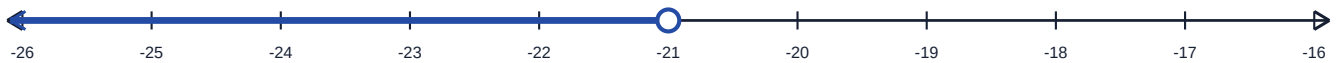
Simplify each side.

$$\frac{1}{7}y < -3$$

Move constants to the other side.

$$y < -21$$

Divide by a positive coefficient; the direction stays the same.



3. $8q + (-5) \geq 43$

$$8q - 5 \geq 43$$

Simplify each side.

$$8q \geq 48$$

Move constants to the other side.

$$q \geq 6$$

Divide by a positive coefficient; the direction stays the same.



4. $10 + \frac{y}{-7} > 20$

$$-\frac{1}{7}y + 10 > 20$$

Simplify each side.

$$-\frac{1}{7}y > 10$$

Move constants to the other side.

$$y < -70$$

Divide by a negative coefficient and reverse the inequality direction.



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Answer key

Solve each inequality. Show your work and graph the solution.

5. $9z + 3 \geq 129$

$$9z \geq 126$$

Move constants to the other side.

$$z \geq 14$$

Divide by a positive coefficient; the direction stays the same.



6. $2 < 6 + \frac{q}{5}$

$$2 < \frac{1}{5}q + 6$$

Simplify each side.

$$-\frac{1}{5}q + 2 < 6$$

Move variable terms to one side.

$$-\frac{1}{5}q < 4$$

Move constants to the other side.

$$q > -20$$

Divide by a negative coefficient and reverse the inequality direction.



7. $-148 < -6n + (-10)$

$$-148 < -6n - 10$$

Simplify each side.

$$6n - 148 < -10$$

Move variable terms to one side.

$$6n < 138$$

Move constants to the other side.

$$n < 23$$

Divide by a positive coefficient; the direction stays the same.



Two-Step Inequalities

Answer key

Solve each inequality. Show your work and graph the solution.

8. $-5 > -12 + \frac{x}{9}$

$$-5 > \frac{1}{9}x - 12$$

Simplify each side.

$$-\frac{1}{9}x - 5 > -12$$

Move variable terms to one side.

$$-\frac{1}{9}x > -7$$

Move constants to the other side.

$$x < 63$$

Divide by a negative coefficient and reverse the inequality direction.



9. $15 \leq 3y + (-9)$

$$15 \leq 3y - 9$$

Simplify each side.

$$-3y + 15 \leq -9$$

Move variable terms to one side.

$$-3y \leq -24$$

Move constants to the other side.

$$y \geq 8$$

Divide by a negative coefficient and reverse the inequality direction.



10. $-15 > -11 + \frac{y}{-8}$

$$-15 > -\frac{1}{8}y - 11$$

Simplify each side.

$$\frac{1}{8}y - 15 > -11$$

Move variable terms to one side.

$$\frac{1}{8}y > 4$$

Move constants to the other side.

$$y > 32$$

Divide by a positive coefficient; the direction stays the same.

