

3-2/3-3. Solving Inequalities

Name _____ Hr _____

EXAMPLE

What are the solutions of $-\frac{2}{3}t > 4$? Graph the solutions.

$$-\frac{2}{3}t > 4$$

Original inequality

$$-\frac{3}{2}\left(-\frac{2}{3}t\right) < -\frac{3}{2}(4)$$

Multiply each side by $-\frac{3}{2}$. Reverse the inequality symbol.

$$t < -6$$

Simplify.

To graph $t < -6$, place an open circle at -6 and shade to the left.



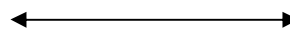
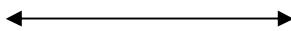
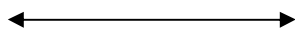
Exercises

Solve each inequality. Graph your solutions.

1. $m - 14 \geq -10$

2. $a - 22 < -7$

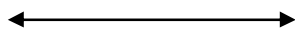
3. $t - 2 < 4$



4. $y - 3 \leq 4$

5. $w - 17 > 13$

6. $d - 9 \geq -12$



7. Write an inequality for each situation.

- a) Barbara's class can have no more than 30 kids. b) I ate at least 8 cookies last night.

8. Anita is baking dinner rolls and pumpkin bread. She needs 4 cups of flour for the rolls. She needs at least 7 cups of flour left for the pumpkin bread. **Write and solve** an inequality to determine how much flour Anita needs before she starts baking.

9. Explain how you know when to flip the inequality symbol when solving.

Solve each inequality.

10. $\frac{x}{7} > -2$

11. $8p \leq 32$

12. $\frac{2}{5}r \geq 6$

13. $-\frac{k}{2} < -5$

14. $-3f \geq 12$

15. $\frac{3}{5}t > -9$

16. $-2w > -8$

17. $-\frac{z}{5} \geq 4$

18. $-\frac{3}{4}d < -\frac{3}{8}$

19. A bus company charges \$2 for each trip. It also sells monthly passes for \$50. **Write and solve** an inequality to find how many trips you could make before the monthly pass is cheaper.