Name _____ Date _____ Class _____

SKILL 74

Skills Readiness

Solve and Graph Inequalities

To solve an inequality, you need to find the numbers that make the inequality a true statement.

You use the same process to solve an inequality that you do to solve an equation. The only difference is that when you multiply or divide by a negative number, you must reverse the inequality symbol.

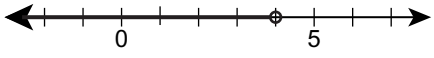
Example 1: Solve $x - 7 < -3$ and graph its solution.

$x - 7 < -3$

$x - 7 + 7 < -3 + 7$ Add 7 to both sides.

$x < 4$

Graph the solution (numbers less than 4). Remember to use an open circle since $x \neq 4$ and shade to the left.

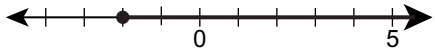


Example 2: Solve $-3x \leq 6$ and graph its solution.

$\frac{-3x}{-3} \leq \frac{6}{-3}$ Divide both sides by -3.

$x \geq -2$ Simplify. Reverse the inequality symbol since you divided by a negative number.

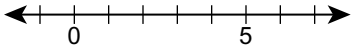
Graph the solution (numbers greater than or equal to -2). Remember to use a closed circle and shade to the right.



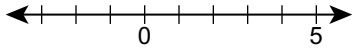
Practice on Your Own

Solve and graph each inequality.

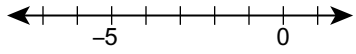
1. $x - 3 \geq 2$



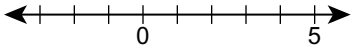
2. $12n < 24$



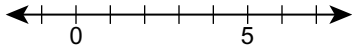
3. $\frac{1}{3}y \leq -2$



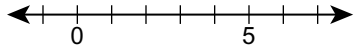
4. $b - 4 < -5$



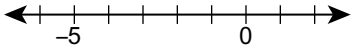
5. $y + 8 > 14$



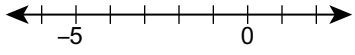
6. $-4t \leq -16$



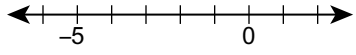
7. $p + 9 > 5$



8. $-\frac{1}{2}x > 1$



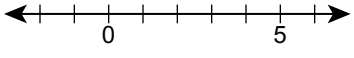
9. $5m \leq -15$



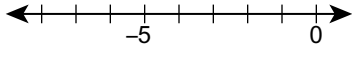
Check

Solve and graph each inequality.

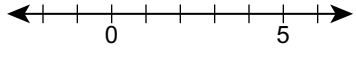
10. $x + 8 \leq 11$



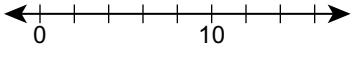
11. $-10n < 70$



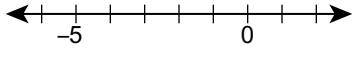
12. $d - 3 \geq -2$



13. $\frac{1}{5}y < 2$



14. $7x \geq -28$



15. $-\frac{1}{4}m > -2$