

Inequalities

= EQUAL

$$2 + x = 7; x = 5$$

$$2 + 3 = 5$$

< IS LESS THAN

$$2 + x < 7; x < 5$$

$$4 < 5$$

≤ IS LESS THAN OR EQUAL TO

$$2 + x \leq 7; x \leq 5$$

SPEED
25
LIMIT

> IS GREATER THAN

$$2 + x > 7; x > 5$$

$$5 < 4$$

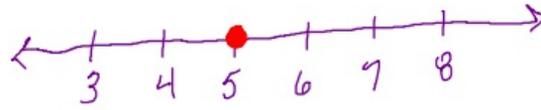
≥ IS GREATER THAN OR EQUAL TO

$$2 + x \geq 7; x \geq 5$$

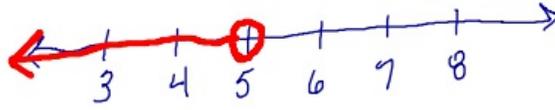
AT LEAST
YOU MUST BE THIS TALL
TO RIDE THIS RIDE

Graphing Inequalities

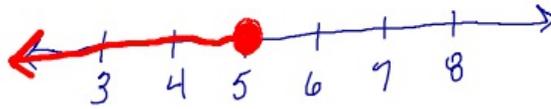
$x = 5$



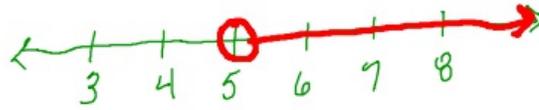
$x < 5$



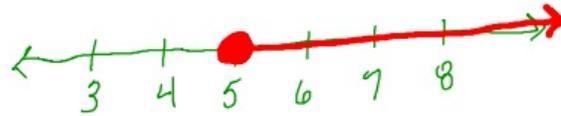
$x \leq 5$



$x > 5$



$x \geq 5$



Lesson 6 Skills Practice

Solve Inequalities by Addition or Subtraction

Solve each inequality.

1. $a + 4 < 9$

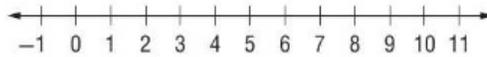
2. $e - 7 > 1$

5. $n - 9 \geq 5$

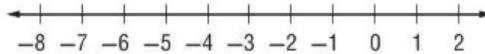
6. $-4 > h - 2$

Solve each inequality. Graph the solution set on a number line.

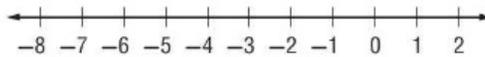
9. $8 < p - 1$



11. $1 > x + 6$



13. $b - 3 \leq -8$



Write an inequality and solve each problem.

15. Two less than a number is less than 9.
16. The difference between a number and 3 is no more than 2.
17. The sum of a number and 8 is more than 4.
18. Two more than a number is less than 13.

SOLVE AND GRAPH

$-4 \geq k - 2$
 $+2$

$-2 \geq k$
 $k \leq -2$

$-4 \geq -3 - 2$
 $-4 \geq -5$

FILLED BECAUSE -2 CAN BE THE ANSWER

$y + 6 > 9$
 -6

$y > 3$

$5 + 6 > 9$
 $11 > 9$

OPEN BECAUSE 3 CANNOT BE THE ANSWER

SOLVE AND GRAPH

$-12 \leq -3q$

$-4d > -36$

SOLVE AND GRAPH

$$\frac{-12}{-3} \leq \frac{-3g}{-3}$$

$4 \leq g$
 $g \leq 4$

$$\begin{aligned} -12 &\leq -3(6) & -12 &\leq -3(3) \\ \cancel{-12} &\leq \cancel{-18} & -12 &\leq -9 \end{aligned}$$

$$-4d > -36$$

$$\begin{aligned} 5 &> 3 \\ \times 2 & \quad \times 2 \\ 10 &> 6 \end{aligned}$$

$$\begin{aligned} 5 &> 3 \\ \times (-2) & \quad \times (-2) \\ -10 &< -6 \end{aligned}$$

OR DIVIDING
MULTIPLY BY A NEGATIVE
YOU HAVE FLIP OR REVERSE
THE INEQUALITY

$$\begin{aligned} \frac{10}{5} &< \frac{15}{5} \\ 2 &< 3 \end{aligned}$$

$$\begin{aligned} \frac{10}{-5} &< \frac{15}{-5} \\ -2 &> -3 \end{aligned}$$

$$-12 \leq -3q$$

SOLVE AND GRAPH

$$-4d > -36$$