Lesson 8 Homework Practice
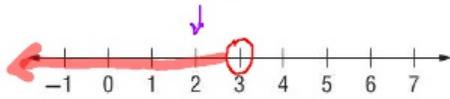
● *FILLED CIRCLE IF ≤ OR ≥*

Solve Two-Step Inequalities

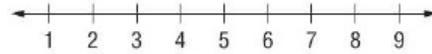○ *OPEN CIRCLE IF < OR >*

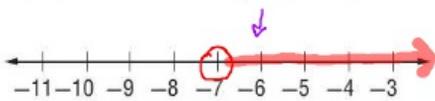**Solve each inequality. Graph the solution set on a number line.**

1. $4x - 3 < 9$ *X < 3*
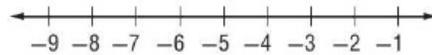

2. $-11 \geq -1 - 2x$
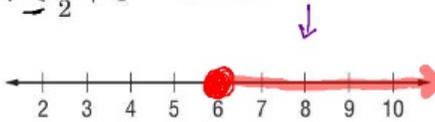

3. $-2 + 2x > -16$ *X > -7*
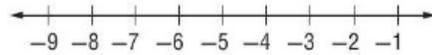

4. $-3x + 2 \leq 17$

5. $7 \leq \frac{x}{2} + 4$ *X ≥ 6*

6. $\frac{x}{5} - 1 \geq -2$

7. $-4 \leq 4x + 8$
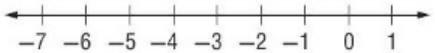
8. $-3x - 3 > 12$
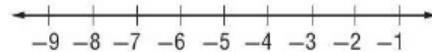
9. RENTAL BICYCLES A rental company charges $15 plus $4 per hour to rent a bicycle. If Margie does not want to spend more than $27 for her rental, write and solve an inequality to find how many hours she can rent the bicycle and not spend more than $27. Interpret the solution.

10. MOWING GRASS Rupesh is mowing grass to save money for a vacation. He charges $12 per yard. Rupesh already has $40 and wants to have at least $148 to take with him. Write and solve an inequality to determine how many yards Rupesh needs to mow to have at least $148. Interpret the solution.

COEFFICIENT   VARIABLE   CONSTANT

1. $4x - 3 < 9$
        $+3 \quad +3$

   $\dfrac{4x}{4} \quad < \dfrac{12}{4}$

   $\boxed{x < 3}$

$4x$ MEANS 4 TIMES X
MULTIPLICATION

STEP 1 CANCEL THE CONSTANT

STEP 2 CANCEL THE COEFFICIENT

$4(2) - 3 \overset{?}{<} 9$

$8 - 3 < 9$

$5 < 9$

$\cdot \text{j}\cdot$

VARIABLE

3. $-2 + 2x > -16$
           $+2 \qquad +2$

   $\dfrac{2x}{2} > \dfrac{-14}{2}$

   $x > -7$

$-2 + 2(-6) \overset{?}{>} -16$

$-2 + (-12) > -16$

$-14 > -16$

$\cdot \text{j}\cdot$

VARIABLE

5. $7 \leq \dfrac{x}{2} + 4$
        $-4 \qquad -4$

   $2 \cdot 3 \leq \dfrac{x}{2} \cdot 2$

   $6 \leq x$

   $x \geq 6$

$7 \overset{?}{\leq} \dfrac{8}{2} + 4$

$7 \leq 4 + 4$

$7 \leq 8$

$\cdot \text{j}\cdot$

Lesson 8 Problem-Solving Practice

Solve Two-Step Inequalities

1. **CLOTHING** Matilda needs at least $112 to buy a new dress. She has already saved $40. She earns $9 an hour babysitting. Write and solve an inequality to find how many hours she will need to babysit to buy the dress. Interpret the solution.

2. **SAVINGS** Tameca already has $55 dollars in her savings account. If she puts $5 per week in her account, write and solve an inequality to find out how many weeks she must save to have at least $100 in her account. Interpret the solution.

3. **COMMISSION** Manuel earns $400 per week plus a 3% commission on everything he sells. Write and solve an inequality to find out how much he must sell to have a weekly income of at least $700. Interpret the solution.

4. **CARS** Remington needs at least $3,000 to buy a used car. He already has $1,800. If he saves $50 per week, write and solve an inequality to find out how many weeks he must save to buy the car. Interpret the solution.

5. **POSTCARDS** Latrell has $8 to spend on postcards. He wants to buy one large postcard and some small ones. Write and solve an inequality to find out how many small postcards Latrell can purchase. Interpret the solution.

Postcards	
Large	$2
Medium	$1.50
Small	$1.25

6. **CARRIAGE RIDE** You want to spend at most $12 on a carriage ride. The driver tells you there is an initial charge of $5 plus $0.50 per mile. Write and solve an inequality to find out how many miles you can ride. Interpret the solution.

7. **BAKING** Corey has 16 cups of flour to make cookies. One batch of cookies takes $2\frac{1}{2}$ cups of flour. If he must save 6 cups of flour for other baking, write and solve an inequality to find out how many batches of cookies he can make. Interpret the solution.

8. **ENTERTAINMENT** Sylvia needs at least $310 for a new audio system. She has already saved $120. She earns $10 per hour at her part-time job. Write and solve an inequality to find how many hours she will need to work to buy the system. Interpret the solution.