2.2 Notetaking with Vocabulary

linear

Learning target: **Understand solving liner inequalities.**

Success criteria: I can solve one step linear inequalities.

Write the meaning of each vocabulary term.

equivalent inequalities

~inequalities that have the same solution set

Core Concepts

Addition Property of Inequality

Words Adding the same number to each side of an inequality produces an equivalent inequality.

Numbers

$$\begin{array}{rr} -3 < 2 & -3 \geq -10 \\ \underline{+4 \quad +4} & \underline{+3 \quad +3} \\ 1 < 6 & 0 \geq -7 \end{array}$$

Algebra If $a > b$, then $a + c > b + c$. If $a \geq b$, then $a + c \geq b + c$.

If $a < b$, then $a + c < b + c$. If $a \leq b$, then $a + c \leq b + c$.

Subtraction Property of Inequality

Words Subtracting the same number from each side of an inequality produces an equivalent inequality.

Numbers

$$\begin{array}{rr} -3 \leq 1 & 7 > -20 \\ \underline{-5 \quad -5} & \underline{-7 \quad -7} \\ -8 \leq -4 & 0 > -27 \end{array}$$

Algebra If $a > b$, then $a - c > b - c$. If $a \geq b$, then $a - c \geq b - c$.

If $a < b$, then $a - c < b - c$. If $a \leq b$, then $a - c \leq b - c$.

Name _____ Date _____

2.2 Notetaking with Vocabulary (continued)

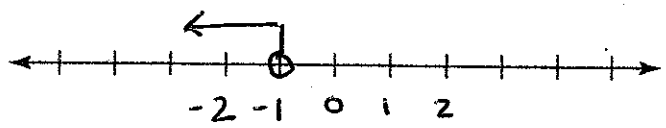
Practice

In Exercises 1–6, solve the inequality. Graph the solution.

1. $x - 3 < -4$

$+3 \quad +3$

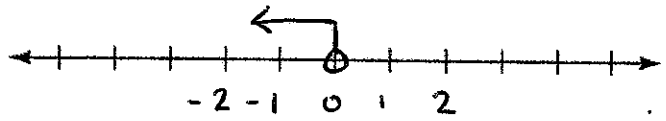
$x < -1$



2. $-3 > -3 + h$

$+3 \quad +3$

$0 > h$ $\qquad$ $h < 0$

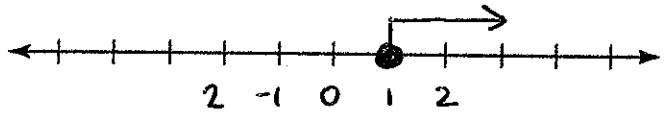


3. $s - (-1) \geq 2$

$s + 1 \geq 2$

$-1 \quad -1$

$s \geq 1$

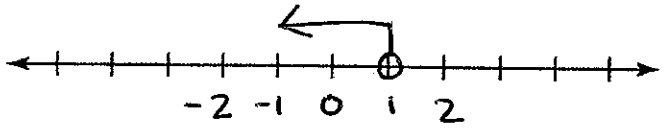


4. $6 - 9 + u < -2$

$-3 + u < -2$

$+3 \quad +3$

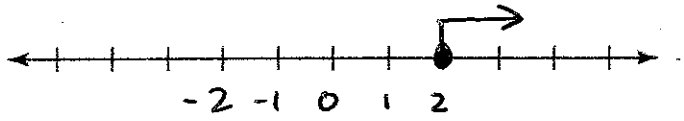
$u < 1$



5. $12 \leq 4c - 3c + 10$

$12 \leq c + 10$
$-10 \quad -10$

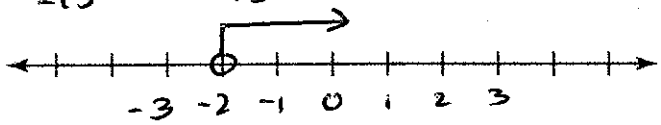
$2 \leq c$ $\quad$ $c \geq 2$



6. $15 - 7p + 8p > 15 - 2$

$15 + p > 13$
$-15 \quad -15$

$p > -2$



7. You have \$15 to spend on groceries. You have \$12.25 worth of groceries already in your cart.

a. Write an inequality that represents how much more money m you can spend on groceries.

$m + 12.25 \leq 15$

b. Solve the inequality.

$m + 12.25 \leq 15$
$-12.25 \quad -12.25$

$m \leq 2.75$

You can spend up to \$2.75 more on groceries.