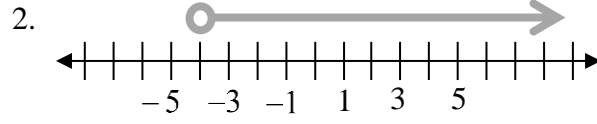## 3-1 Inequalities and Their Graphs

Write the inequality represented by each graph

1.

    -4 -2 0 2 4 6 8

2.

    −5 −3 −1 1 3 5
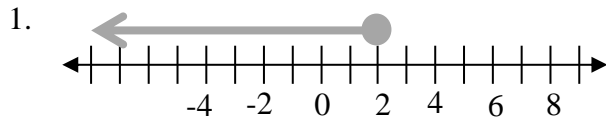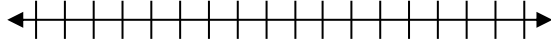
Graph each inequality.
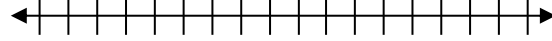
3. $-2 > f$
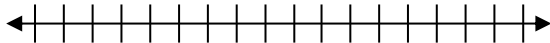
4. $n \geq -1$
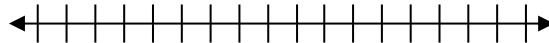
5. Define a variable and write an inequality to model this situation: A person must be at most 35 years old to participate in a certain medical study.

3-2 Solve Inequalities Using + or −

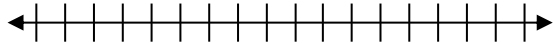**Solve each inequality and graph the solutions.**
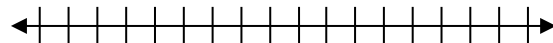
1. $v - 5 < 8$

2. $d + 4 \geq -3$

Graph each inequality.
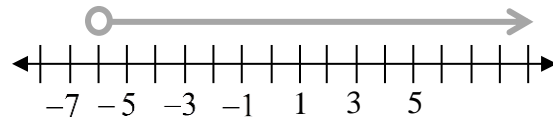
3. $0 \leq 2a - a - 3$

4. $t - 8 > -5$

5. Describe and correct the error:

$$y - 2 > -4$$
$$+2 \quad +2$$
$$y > \quad -6$$

−7 − 5   −3   −1   1   3   5

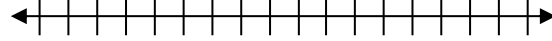**3-3 Solve Inequalities Using × or ÷**

Solve each inequality and graph the solutions.
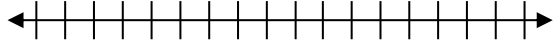
1. $\frac{5}{3}t \le 15$
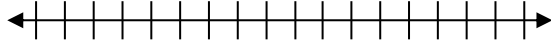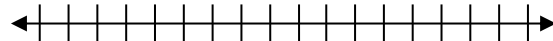
2. $\frac{g}{3} - 2 > 7$

**Graph each inequality.**

3. $6 < -3(x + 2)$

4. $-5 \le \frac{x}{-3}$

Identify a variable, write an inequality to represent this situation, and solve it.
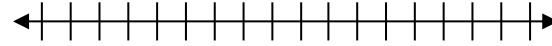
5. To remain on the football team, Steven must attend at least $\frac{3}{4}$ of the study hall sessions offered. He attends 12 sessions. If Steven barely met the requirements, what is the maximum number of study hall sessions there could have been?

3-4 Solve Multi-Step Inequalities

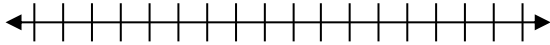**Solve each inequality and graph the solutions.**
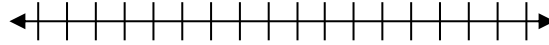
1. $3f - 12 < -24$
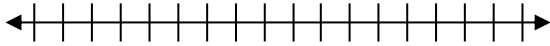
2. $\frac{4}{5}x - 8 \geq -4$

3. $2(3 - 4z) \leq -6z$

4. $4(k - 6) + 8 \geq 8(k + 3)$

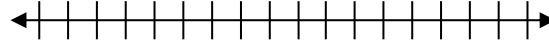**Identify a variable and write an inequality to represent the situation. Then solve it.**

5. Brad has a budget of $100 for going to the gym. The gym he uses charges $25 for a monthly membership and $4.50 per visit. How many times can Brad go to the gym and spend no more than $100?

3-6 Compound Inequalities

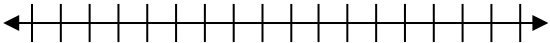**Solve each compound inequality and graph the solutions.**
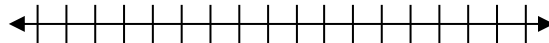
1. $-4 \leq x + 3 < 2$
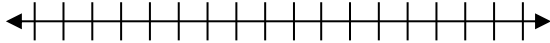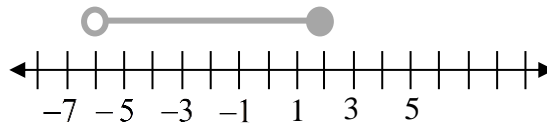
2. $-1 \leq \frac{q-2}{4} < 0$

3. $3 - p \geq 5 \ and \ p - 4 > -10$

4. $r - 3 < -2 \ or \ r - 4 > -5$

5. Write a compound inequality that could represent the graph.

$-7 \quad -5 \quad -3 \quad -1 \quad 1 \quad 3 \quad 5$

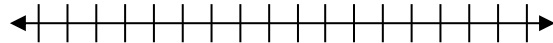Per: _____

3-7 Absolute Value Equations & Inequalities

Solve each and graph the solutions.
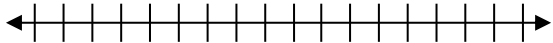
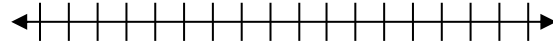1. $|k - 4| > 3$

2. $|5 + g| < 1$

3. $|6 - 3c| \leq 9$

4. $|4n - 2| \geq 6$

5. $2 + 3|x + 4| = 8$