5-5 Practice
Inequalities Involving Absolute Value

Match each open sentence with the graph of its solution set.
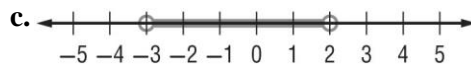
1. $|x - 3| \geq 1$

a.
$$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$$

2. $|2x + 1| < 5$

b.
$$-2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5\ \ 6\ \ 7\ \ 8$$

3. $|5 - x| \geq 3$

c.
$$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$$

Express each statement using an inequality involving absolute value.
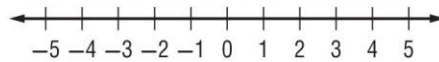
4. The height of the plant must be within 2 inches of the standard 13-inch show size.

5. The majority of grades in Sean's English class are within 4 points of 85.

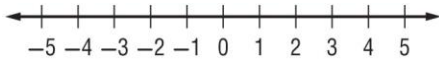**Solve each inequality. Then graph the solution set.**
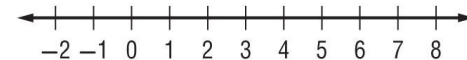
6. $|2z - 9| \leq 1$

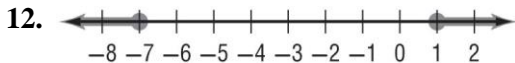$$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$$

7. $|3 - 2r| > 7$

$$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$$

8. $|3t + 6| < 9$

$$-5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5$$

9. $|2g - 5| \geq 9$

$$-2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5\ \ 6\ \ 7\ \ 8$$

Write an open sentence involving absolute value for each graph.

10.
$$1\ \ 2\ \ 3\ \ 4\ \ 5\ \ 6\ \ 7\ \ 8\ \ 9\ \ 10\ \ 11$$

11.
$$-8\ -7\ -6\ -5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2$$

12.
$$-8\ -7\ -6\ -5\ -4\ -3\ -2\ -1\ \ 0\ \ 1\ \ 2$$

13.
$$-3\ -2\ -1\ \ 0\ \ 1\ \ 2\ \ 3\ \ 4\ \ 5\ \ 6\ \ 7$$
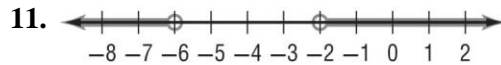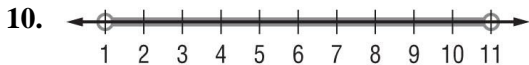
14. RESTAURANTS The menu at Jeanne's favorite restaurant states that the roasted chicken with vegetables entree typically contains 480 Calories. Based on the size of the chicken, the actual number of Calories in the entree can vary by as many as 40 Calories from this amount.

a. Write an absolute value inequality to represent the situation.

b. What is the range of the number of Calories in the chicken entree?