

Name: _____ Period: _____ Date: _____

Absolute Value Equations and Inequalities Bell Work

Solve each equation.

1. $|x + 2| = 8$

2. $|4x + 3| = 33$

3. $|x - 3| + 12 = 50$

4. $|4x - 7| + 2 = 15$

Solve each inequality.

5. $|x + 6| \geq 2$

6. $|3x - 7| < 14$

7. $|3x - 6| + 11 > 17$

Absolute Value Equations and Inequalities Bell Work

Solve each inequality then graph its solution.

8. $|5 - x| > 6$



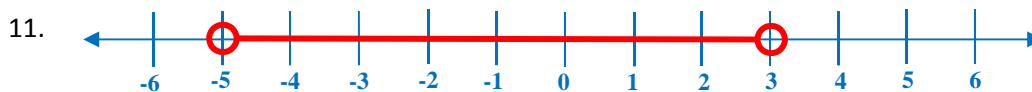
9. $|4 - 5x| \leq 19$



10. $|4x + 2| - 3 \geq 11$



For each graph, write an open sentence involving absolute value.



Midpoint:

Distance from midpoint:



Midpoint:

Distance from midpoint:

Absolute Value Equations and Inequalities Bell Work

Solve each equation.

1. $|x + 2| = 8$

$x + 2 = 8$

$x + 2 - 2 = 8 - 2$

$x = 6$

$x + 2 = -8$

$x + 2 - 2 = -8 - 2$

$x = -10$

2. $|4x + 3| = 33$

$4x + 3 = 33$

$4x + 3 - 3 = 33 - 3$

$4x = 30$

$\frac{4x}{4} = \frac{30}{4}$

$x = \frac{15}{2}$

$4x + 3 = -33$

$4x + 3 - 3 = -33 - 3$

$4x = -36$

$\frac{4x}{4} = \frac{-36}{4}$

$x = -9$

3. $|x - 3| + 12 = 50$

$|x - 3| + 12 - 12 = 50 - 12$

$|x - 3| = 38$

$x - 3 = 38$

$x - 3 + 3 = 38 + 3$

$x = 41$

$x - 3 = -38$

$x - 3 + 3 = -38 + 3$

$x = -35$

4. $|4x - 7| + 2 = 15$

$|4x - 7| + 2 - 2 = 15 - 2$

$|4x - 7| = 13$

$4x - 7 = 13$

$4x - 7 + 7 = 13 + 7$

$4x = 20$

$\frac{4x}{4} = \frac{20}{4}$

$x = 5$

$4x - 7 = -13$

$4x - 7 + 7 = -13 + 7$

$4x = -6$

$\frac{4x}{4} = \frac{-6}{4}$

$x = -\frac{3}{2}$

Solve each inequality.

5. $|x + 6| \geq 2$

$x \geq -4$ or $x \leq -8$

$x + 6 \geq 2$

$x + 6 - 6 \geq 2 - 6$

$x \geq -4$

$x + 6 \leq -2$

$x + 6 - 6 \leq -2 - 6$

$x \leq -8$

6. $|3x - 7| < 14$

$-\frac{7}{3} < x < 7$

$3x - 7 < 14$

$3x - 7 + 7 < 14 + 7$

$3x < 21$

$\frac{3x}{3} < \frac{21}{3}$

$x < 7$

$3x - 7 > -14$

$3x - 7 + 7 > -14 + 7$

$3x > -7$

$\frac{3x}{3} > \frac{-7}{3}$

$x > -\frac{7}{3}$

Absolute Value Equations and Inequalities Bell Work

7. $|3x - 6| + 11 > 17$

$$|3x - 6| + 11 - 11 > 17 - 11$$

$$|3x - 6| > 6$$

$$x > 4 \text{ or } x < 0$$

$$3x - 6 > 6$$

$$3x - 6 + 6 > 6 + 6$$

$$3x > 12$$

$$\frac{3x}{3} > \frac{12}{3}$$

$$x > 4$$

$$3x - 6 < -6$$

$$3x - 6 + 6 < -6 + 6$$

$$3x < 0$$

$$\frac{3x}{3} < \frac{0}{3}$$

$$x < 0$$

Solve each inequality then graph its solution.

8. $|5 - x| > 6$



$$x < -1 \text{ or } x > 11$$

$$5 - x > 6$$

$$5 - 5 - x > 6 - 5$$

$$-x > 1$$

$$\frac{-x}{-1} < \frac{1}{-1}$$

$$x < -1$$

$$5 - x < -6$$

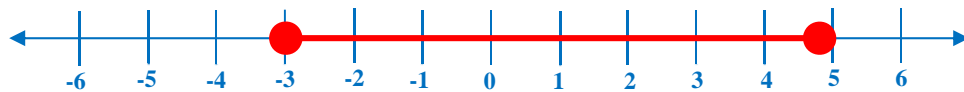
$$5 - 5 - x < -6 - 5$$

$$-x < -11$$

$$\frac{-x}{-1} > \frac{-11}{-1}$$

$$x > 11$$

9. $|4 - 5x| \leq 19$



$$-3 \leq x \leq \frac{23}{5}$$

$$4 - 5x \leq 19$$

$$4 - 4 - 5x \leq 19 - 4$$

$$-5x \leq 15$$

$$\frac{-5x}{-5} \geq \frac{15}{-5}$$

$$x \geq -3$$

$$4 - 5x \geq -19$$

$$4 - 4 - 5x \geq -19 - 4$$

$$-5x \geq -23$$

$$\frac{-5x}{-5} \leq \frac{-23}{-5}$$

$$x \leq \frac{23}{5}$$

Absolute Value Equations and Inequalities Bell Work

10. $|4x + 2| - 3 \geq 11$



$$|4x + 2| - 3 + 3 \geq 11 + 3$$

$$|4x + 2| \geq 14$$

$$x \geq 3 \text{ or } x \leq -4$$

$$4x + 2 \geq 14$$

$$4x + 2 - 2 \geq 14 - 2$$

$$4x \geq 12$$

$$\frac{4x}{4} \geq \frac{12}{4}$$

$$x \geq 3$$

$$4x + 2 \leq -14$$

$$4x + 2 - 2 \leq -14 - 2$$

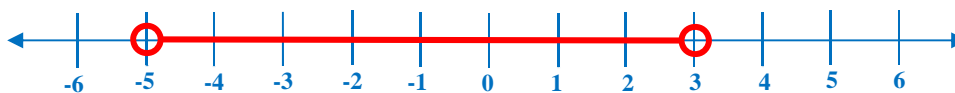
$$4x \leq -16$$

$$\frac{4x}{4} \leq \frac{-16}{4}$$

$$x \leq -4$$

For each graph, write an open sentence involving absolute value.

11.



Midpoint:

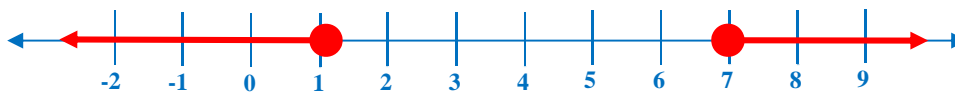
-1

Distance from midpoint:

4

$$|x + 1| < 4$$

12.



Midpoint:

4

Distance from midpoint:

3

$$|x - 4| \geq 3$$