Name _____ Date _____ Class _____

TEKS 2A.2.A

LESSON 2-8

Practice B

Solving Absolute-Value Equations and Inequalities

Solve each equation.

1. $|2x + 1| = 7$

2. $|-7x| = 28$

3. $3|3x| - 7 = 2$

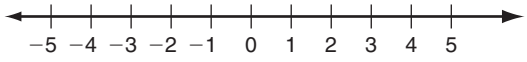
4. $|2x - 5| = 5$

5. $2|x + 1| = 14$

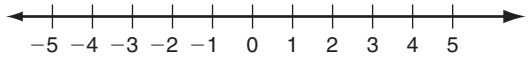
6. $|4 - x| + 2 = 9$

Solve each inequality or compound inequality. Then graph the solution.

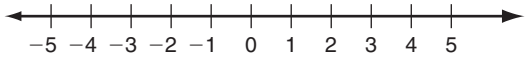
7. $-4x + 2 > -10$ and $5x - 12 < 8$



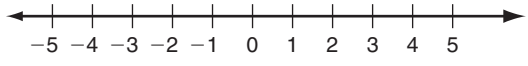
8. $3x - 4 \geq 8$ or $-x + 12 > 16$



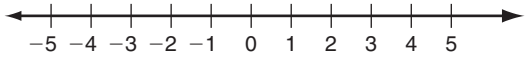
9. $|9x| \geq 18$



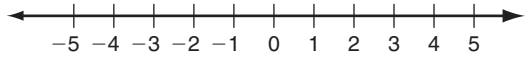
10. $|3x - 7| > 8$



11. $|0.3x| > 1$



12. $|7x| - 12 \leq 9$



Solve.

13. Any measurement is accurate within ± 0.5 of the measurement unit. For example, if you measure your pencil to the nearest inch, your measurement could be 0.5 inch too long or 0.5 inch too short. Write an absolute-value inequality that shows the maximum and minimum actual measure of a nail measured to be 4.4 centimeters to the nearest 0.1 centimeter.

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TEKS 2A.2.A

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Solve each equation.

1. $|2x + 1| = 7$

$x = 3$ or $x = -4$

2. $|-7x| = 28$

$x = \pm 4$

3. $3|3x| - 7 = 2$

$x = \pm 1$

4. $|2x - 5| = 5$

5. $2|x + 1| = 14$

$x = 6$ or $x = -8$

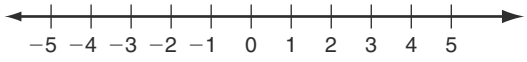
6. $|4 - x| + 2 = 9$

$x = -3$ or $x = 11$

Solve each inequality or compound inequality. Then graph the solution.

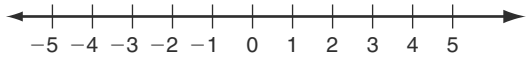
7. $-4x + 2 > -10$ and $5x - 12 < 8$

$x < 4$



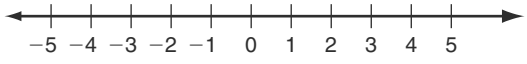
8. $3x - 4 \geq 8$ or $-x + 12 > 16$

$x \geq 4$ or $x < -4$



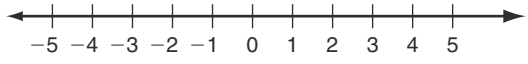
9. $|9x| \geq 18$

$x \leq -2$ or $x \geq 2$



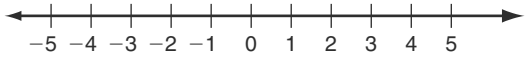
10. $|3x - 7| > 8$

$x < -\frac{1}{3}$ or $x > 5$



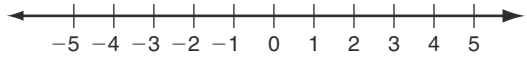
11. $|0.3x| > 1$

$x < -\frac{10}{3}$ or $x > \frac{10}{3}$



12. $|7x| - 12 \leq 9$

$x \geq -3$ and $x \leq 3$



Solve.

13. Any measurement is accurate within ± 0.5 of the measurement unit. For example, if you measure your pencil to the nearest inch, your measurement could be 0.5 inch too long or 0.5 inch too short. Write an absolute-value inequality that shows the maximum and minimum actual measure of a nail measured to be 4.4 centimeters to the nearest 0.1 centimeter.

$|m - 4.4| \leq 0.05$