On A <u>Separate</u> Sheet Of Paper:
1) Graph
2) Put In Interval Notation

### GUIDED PRACTICE

1. **Vocabulary** A graph of an inequality on a number line with two parts is a __?__ .
   (*conjunction, disjunction*)

**SEE EXAMPLE 1**
p. 150

Solve each compound inequality. Then graph the solution set.

2. $x - 7 > -3$ OR $5x \leq -15$    3. $3x \leq 18$ AND $x + 4 > 2$    4. $x - 2 > -5$ OR $5x \geq 25$

**SEE EXAMPLE 2**
p. 152

Solve each equation.

5. $|x + 5| = 2$    6. $|2x| - 6 = 4$    7. $|-x| + 4 = 7$

**SEE EXAMPLE 3**
p. 152

Solve each inequality. Then graph the solution set.

⑧ $|2x - 3| \geq 5$    ⑨ $2|x - 3| > 8$    ⑩ $|3x| + 8 > 5$

**SEE EXAMPLE 4**
p. 153

⑪ $\dfrac{|4x + 8|}{3} < 8$    ⑫ $|9 - 3x| \leq 6$    ⑬ $-5|x - 3| \geq 15$

### PRACTICE AND PROBLEM SOLVING

| Independent Practice | |
|---|---|
| For Exercises | See Example |
| 14–15 | 1 |
| 16–19 | 2 |
| 20–23 | 3 |
| 24–27 | 4 |

**TEKS ★ TAKS**

Skills Practice p. S7
Application Practice p. S33

Solve each compound inequality. Then graph the solution set.

14. $2x - 3 \geq 7$ OR $x + 5 < 2$    15. $3x + 6 \leq 21$ AND $4x - 2 \geq -6$
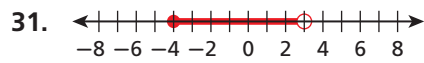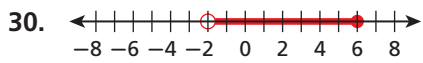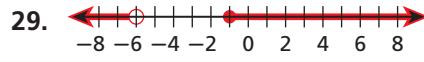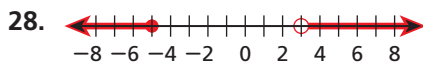
Solve each equation.

16. $|-3x| = 9$    17. $|x + 7| = 2$    18. $|3x - 9| = 6$    19. $5|2x| - 6 = 24$

Solve each inequality. Then graph the solution set.

⑳ $|-2x| < 2$    ㉑ $|x + 5| \geq 2$    ㉒ $|8x| + 56 \geq 40$    ㉓ $|7x + 14| \geq 35$

㉔ $|-0.5x| > 1$    ㉕ $6|2x + 5| > 66$    ㉖ $-8|x + 4| > 48$    ㉗ $\dfrac{|8x + 4|}{6} < 10$

Write a compound inequality for each graph.

28.


29.


30.


31.


Solve and graph.

32. $5x - 9 > 11$ AND $7x + 12 \leq 61$    33. $7x + 4 \leq 3x - 12$ OR $\dfrac{9x - 15}{5} > 6$

34. $4(3 - 2x) < -20$ AND $\dfrac{3}{2}x - 4 < 5$    35. $5x + 12 > 2x - 3$ OR $3 - 5x < -17$

36. /// **ERROR ANALYSIS** /// Find and explain the error in one solution below.

Ⓐ
|3x − 6| < 12
3x − 6 < −12 and 3x − 6 > 12
3x < −6 and 3x > 18
x < −2 and x > 6

Ⓑ
|3x − 6| < 12
3x − 6 > −12 and 3x − 6 < 12
3x > −6 and 3x < 18
x > −2 and x < 6

**TEKS** 2A.2.A

**LESSON** **Practice B**
**2-8** *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 $-x + 12 > 16$

_____   _____



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

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

**⑨** $|9x| \geq 18$

**⑩** $|3x - 7| > 8$

_____   _____

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

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

**⑪** $|0.3x| > 1$

**⑫** $|7x| - 12 \leq 9$

_____   _____

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

$-5 \ -4 \ -3 \ -2 \ -1 \ \ 0 \ \ 1 \ \ 2 \ \ 3 \ \ 4 \ \ 5$
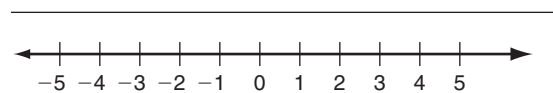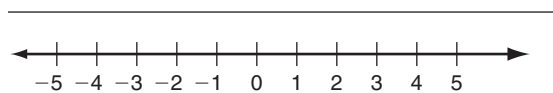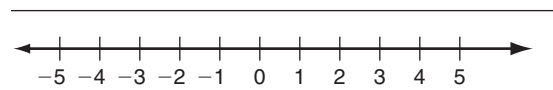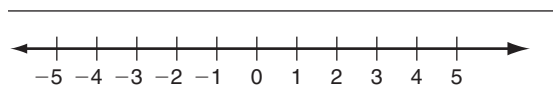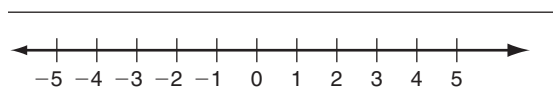
**Solve.**

**13.** Any measurement is accurate within $\pm 0.5$ 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.

_____

**Holt Algebra 2**