

**EXTRA PRACTICE 10**  
**Absolute-Value Equations and Inequalities**  
**Use after Section 1.6**

Name \_\_\_\_\_

Examples: Solve.

a)  $|3x - 5| = 16$   
 $3x - 5 = -16$  or  $3x - 5 = 16$   
 $3x = -11$  or  $3x = 21$   
 $x = -\frac{11}{3}$  or  $x = 7$

The solution set is  $\left\{-\frac{11}{3}, 7\right\}$ .

b)  $|3x - 5| \leq 16$   
 $-16 \leq 3x - 5 \leq 16$   
 $-11 \leq 3x \leq 21$   
 $-\frac{11}{3} \leq x \leq 7$

The solution set is  $\left\{x \mid -\frac{11}{3} \leq x \leq 7\right\}$ .

c)  $|3x - 5| > 16$   
 $3x - 5 < -16$  or  $3x - 5 > 16$   
 $3x < -11$  or  $3x > 21$   
 $x < -\frac{11}{3}$  or  $x > 7$

The solution set is  $\left\{x \mid x < -\frac{11}{3} \text{ or } x > 7\right\}$ .

Solve.

1.  $|8x - 3| > 21$  \_\_\_\_\_

2.  $|y - 2| \leq 7$  \_\_\_\_\_

3.  $|5x + 8| < 23$  \_\_\_\_\_

4.  $|9 - 2x| = 5$  \_\_\_\_\_

5.  $|x| = 4$  \_\_\_\_\_

6.  $\left|\frac{1}{2}y - 3\right| \geq 3$  \_\_\_\_\_

7.  $|y + 9| \leq 2$  \_\_\_\_\_

8.  $\left|y + \frac{1}{3}\right| > \frac{4}{3}$  \_\_\_\_\_

9.  $|-4x + 3| > 13$  \_\_\_\_\_

10.  $\left|\frac{5}{8}x\right| < 10$  \_\_\_\_\_

**EXTRA PRACTICE 10 (continued)**  
**Absolute-Value Equations and Inequalities**  
**Use after Section 1.6**

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11.  $|10y - 13| = 4.7$  \_\_\_\_\_ 12.  $|9 - 4x| \geq 15$  \_\_\_\_\_

13.  $|x + 9| > 17$  \_\_\_\_\_ 14.  $\left| \frac{3}{4} + x \right| = \frac{1}{4}$  \_\_\_\_\_

15.  $|9 - y| > 11$  \_\_\_\_\_ 16.  $|y| \leq \frac{1}{5}$  \_\_\_\_\_

17.  $\left| \frac{3}{7}y \right| > \frac{3}{7}$  \_\_\_\_\_ 18.  $|3 - x| = 2$  \_\_\_\_\_

19.  $|5x - 2| \geq 15$  \_\_\_\_\_ 20.  $|17 - 4x| < 23$  \_\_\_\_\_

21.  $|y - 3| = 51$  \_\_\_\_\_ 22.  $|19 - x| > 19$  \_\_\_\_\_

23.  $|8x - 3| \leq 5$  \_\_\_\_\_ 24.  $|2y - 9| < 15$  \_\_\_\_\_

25.  $|y| > 9$  \_\_\_\_\_ 26.  $\left| 3y - \frac{5}{9} \right| \leq \frac{4}{9}$  \_\_\_\_\_

27.  $|8 - 3y| < 35$  \_\_\_\_\_ 28.  $|0.2x + 05| \geq 09$  \_\_\_\_\_

29.  $\left| x - \frac{2}{9} \right| \geq \frac{4}{9}$  \_\_\_\_\_ 30.  $|34 - 4y| \leq 14$  \_\_\_\_\_