

**LESSON**  
**5.6**

# Practice C

*For use with the lesson "Solve Absolute Value Inequalities"*
**Solve the inequality. Graph your solution.**

1.  $|x - 4| < 10$



2.  $|x + 7| > 4.5$



3.  $|x - 10| \leq 13$



4.  $|2x - 5| > 17$



5.  $|8 - 3x| < 14$



6.  $7\left|\frac{1}{2}x + 5\right| \geq 14$



7.  $-2|4x + 3| < -8$



8.  $|5x - 2| - 8 \geq -3$



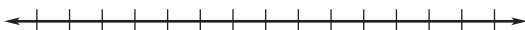
9.  $6|2x + 9| - 14 \leq 16$



10.  $\frac{3}{4}|4x - 4| - 5 > 10$



11.  $\frac{3}{5}|10 - 5x| + 7 > 25$



12.  $-\frac{1}{2}|5 - 9x| + 4 \leq -10$


**Write the verbal sentence as an inequality. Then solve the inequality and graph your solution.**

13. Seven more than 2 times the distance between  $x$  and 4 is less than 15.

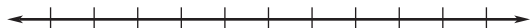


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**Practice C** *continued*  
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14. The difference between 9 and 3 times the distance between  $x$  and  $-5$  is greater than 6.



15. The difference between 5 and 2 times the distance between  $x$  and  $-7$  is less than 1.



16. The difference between 3 times the distance between  $x$  and  $-2$  and 5 is greater than 10.



**Tell whether the statement is true or false. If it is false, give a counterexample.**

17. If  $a$  is a solution of  $|3 - 8x| < 6$ , then  $a$  is also a solution of  $8x - 3 > -6$ .
18. If  $a$  is a solution of  $-3|2x - 5| > -6$ , then  $a$  is also a solution of  $2x - 5 > -2$ .
19. Solve  $|x - 5| \geq 6$  or  $|x + 1| \leq 3$ . Describe your steps in solving the compound inequality.
20. **Body Temperature** A feline's body temperature is considered to be normal if it is  $101.55^\circ\text{F}$  with an absolute deviation of  $1.55^\circ\text{F}$ .
- Write an absolute value inequality that represents the normal temperature range.
  - Solve the inequality. What is the normal temperature range?
  - What is the normal temperature range in degrees Celsius? Explain how you got your answer.
21. **Bowling** A bowling ball should have a circumference of 26.853 inches with an absolute deviation of 0.149 inch.
- Write an absolute value inequality that represents the range for the circumference of a bowling ball.
  - What are the maximum and minimum circumferences of a bowling ball?
  - What are the maximum and minimum diameters of a bowling ball? Explain how you got your answer.
  - Is a ball that has a circumference of 27 inches and a diameter of 8.6 inches within the ranges that it should be? Explain why or why not.