Practice B

For use with pages 398–403

Solve the inequality. Graph your solution.

1. $|x| \geq 5$

2. $|x| < 6.5$

3. $|x| \geq \frac{3}{2}$

4. $|x - 6| \leq 1$

5. $|x + 7| > 11$

6. $|10 - x| < 2$

7. $|-x - 5| < 1$

8. $|2x + 1| \geq 5$

9. $|3x - 2| \leq 7$

10. $|8 - 3x| \geq 7$

11. $\left|\frac{1}{2}x - 4\right| > 20$

12. $\left|1 - \frac{4}{3}x\right| < 5$

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

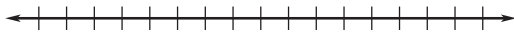**13.** The distance between x and 8 is less than 14.
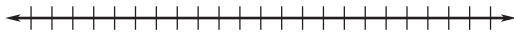
Practice B *continued*

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14. The distance between x and -5 is greater than or equal to 12.

15. The distance between 9 and x is less than or equal to 8.

16. The distance between 10 and $2x$ is greater than 34.

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

17. If a is a solution of $|x + 4| < 7$, then a is also a solution of $x + 4 < 7$.

18. If a is a solution of $|x - 6| \geq 4$, then a is also a solution of $x - 6 \leq -4$.

19. **DVDs** The average price of a standard DVD is $15.99 with a standard deviation of $4. Write an absolute value inequality that describes this range in prices.

20. **Body Temperature** A canine's body temperature is considered to be normal if it is 101°F with an absolute deviation of 1.5°F.

    a. Write an absolute value inequality that represents the normal temperature range.

    b. Solve the inequality. What is the normal temperature range?

21. **Baseball** A baseball should weigh 5.12 ounces with an absolute deviation of 0.035 ounce. The circumference of a baseball should be 9.05 inches with an absolute deviation of 0.05 inch.

    a. Write absolute value inequalities that represent the ranges for the weight and circumference of a baseball.

    b. Is a ball that weighs 5.16 ounces and has a circumference of 9 inches within the ranges that it should be? *Explain* why or why not.

    c. What are the maximum and minimum circumferences of a baseball?

    d. What are the maximum and minimum weights of a baseball?