

LESSON**2-8****Practice B*****Solving Absolute-Value Equations and Inequalities*****Solve each equation.**

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

2. $|-7x| = 28$

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

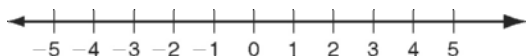
4. $|2x - 5| = 5$

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

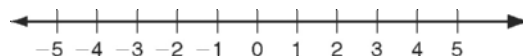
6. $|4 - x| + 2 = 9$

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

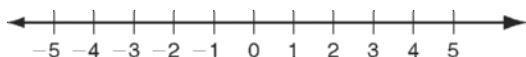
7. $-4x + 2 > -10$ and $5x - 12 < 8$



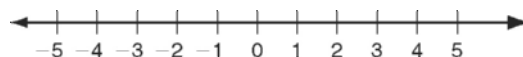
8. $3x - 4 \geq 8$ or $-x + 12 > 16$



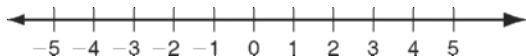
9. $|9x| \geq 18$



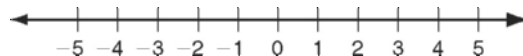
10. $|3x - 7| > 8$



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.

4. Possible answer: $y \approx -0.15x + 38$
5. $r \approx -0.98$
6. Possible answer: There is a strong negative correlation.
7. $y \approx -0.175x + 39.85$
8. A
9. C

Reading Strategies

1. The slope and r have the same sign.
2. No; possible answer: a value close to 0 means that the two variables have relatively no correlation.
3. Possible answer: the correlation coefficient would be positive; the more hours I spend studying, the higher my grade will be.
4. Possible answer: the correlation coefficient would be negative; the more rain there is, the fewer people want to go to the beach.

LESSON 2-8

Practice A

1. $x < 4$ and $x > 0$
2. $x \geq -2$ or $x < -3$
3. $x \geq -4$ and $x \leq -1$
4. 36; -36; 12; -12
5. $x = 6$ or $x = -6$
6. $x = 3$ or $x = -3$
7. Disjunction, or
8. Conjunction, and
9. Disjunction, or
10. $-\frac{5}{3} \leq x \leq \frac{7}{3}$
11. $x < -1$ or $x > 1$
12. 9 or 15

Practice B

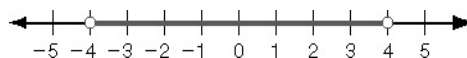
1. $x = 3$ or $x = -4$
2. $x = \pm 4$
3. $x = \pm 1$
4. $x = 0$ or $x = 5$
5. $x = 6$ or $x = -8$
6. $x = -3$ or $x = 11$
7. $x < 4$
8. $x \geq 4$ or $x < -4$
9. $x \leq -2$ or $x \geq 2$
10. $x < -\frac{1}{3}$ or $x > 5$
11. $x < -\frac{10}{3}$ or $x > \frac{10}{3}$
12. $x \geq -3$ and $x \leq 3$
13. $|m - 4.4| \leq 0.05$

Practice C

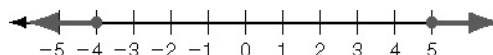
1. $x = -6$ or $x = 9$
2. $x = -11$ or $x = -7$
3. $x = -3$ or $x = 11$
4. $\frac{-1}{2} < x < 2$
5. $x < 5$
6. $x \leq -\frac{5}{4}$ or $x \geq \frac{7}{4}$
7. $x < -\frac{2}{5}$ or $x > \frac{6}{5}$
8. $x \leq -1$ or $x \geq 5$
9. $x > -1$ and $x < \frac{7}{9}$
10. Possible answer: Ben is correct. There is no solution. When the inequality is simplified, the result is an inequality that sets the absolute value of an expression less than a negative number. Since absolute values are always positive, this is never true.

Reteach

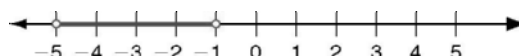
1. -1; 2
2. -3; 0
3. $x < -3$; $x \geq -1$
4. $x \geq -2$; $x < 3$
5. $x < 4$ and $x > -4$



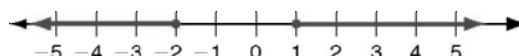
6. $x \leq 4$ or $x \geq 5$



7. -2; 2; -5; -1



8. 3; -3; 2; -4; 1; -2



Challenge

1. a. $\frac{-c-b}{a} \leq x \leq \frac{c-b}{a}$

b. Possible answer: The solution of the absolute-value inequality gives $x \leq \frac{c-b}{a}$

and $x \geq \frac{-c-b}{a}$. Read the second

inequality from right to left and combine the two inequalities into a single inequality.

2. $-4 \leq x \leq 1$
3. $-2 \leq x \leq \frac{1}{2}$