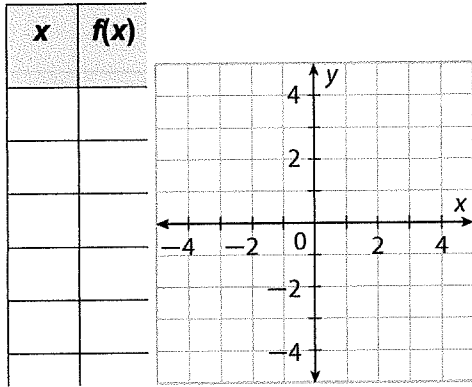


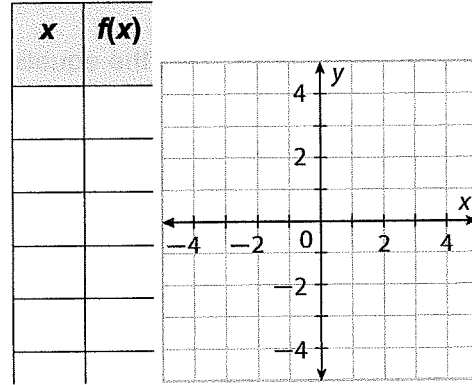
Absolute Value Functions and Transformations

Graph the function (using a table OR using the vertex and slope).

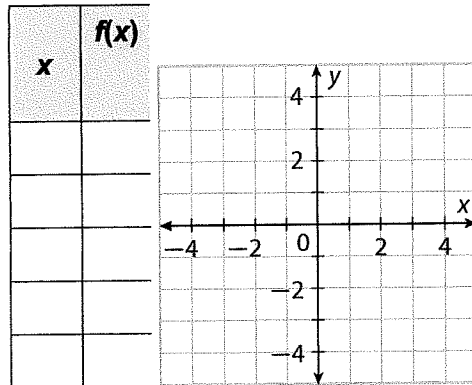
1. $f(x) = |x - 3| + 2$



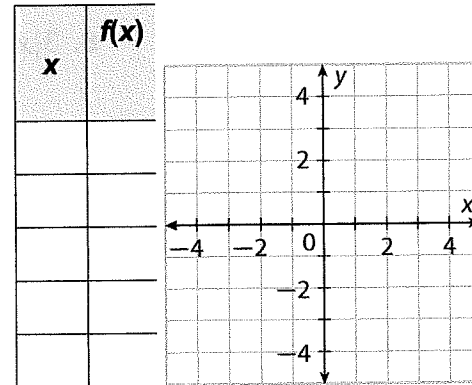
2. $f(x) = 2|x + 1| - 2$



3. $f(x) = 2|x + 1| - 1$

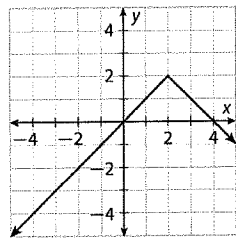


4. $f(x) = -|x + 1| + 2$

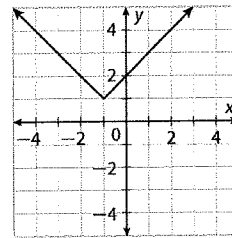


Write an equation for each absolute value function whose graph is shown.

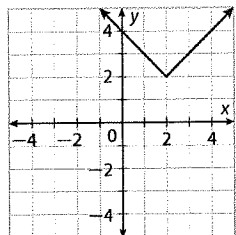
5.



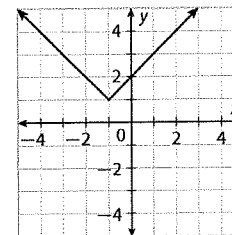
6.



7.



8.



Solving Absolute Value Equations

Solve.

1. How many solutions does the equation $|x + 7| = 1$ have? _____

2. How many solutions does the equation $|x + 7| = 0$ have? _____

3. How many solutions does the equation $|x + 7| = -1$ have? _____

Solve each equation algebraically.

4. $|x| = 12$

5. $|x| = \frac{1}{2}$

6. $|x| - 6 = 4$

7. $5 + |x| = 14$

8. $3|x| = 24$

9. $|x + 3| = 10$

10. $\left|x - \frac{1}{2}\right| = 2$

11. $3|x - 1| = -15$

12. $|x - 1| - 1.4 = 6.2$

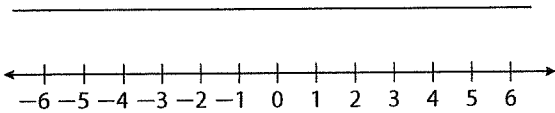
13. $\frac{|4x - 1|}{2} = 1$

14. $-3|5x - 2| = -12$

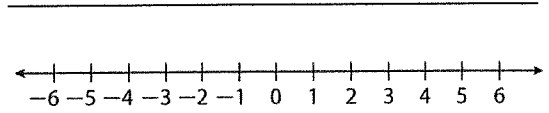
Solving Absolute Value Inequalities

Solve each inequality and graph the solutions.

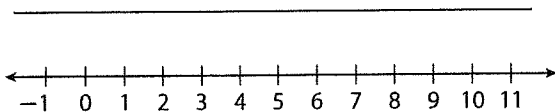
1. $|x| - 2 \leq 3$



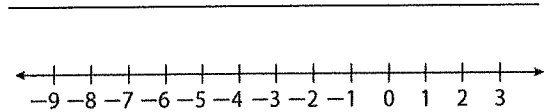
2. $|x+1| + 5 < 7$



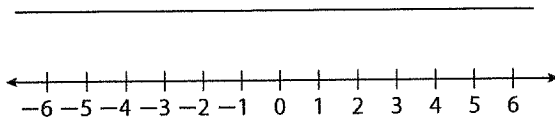
3. $3|x-6| \leq 9$



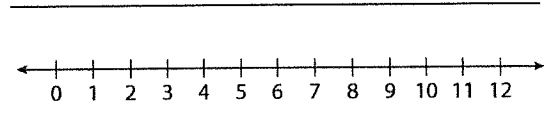
4. $|x+3| - 1.5 < 2.5$



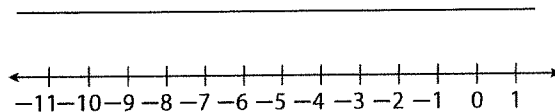
5. $|x| + 17 > 20$



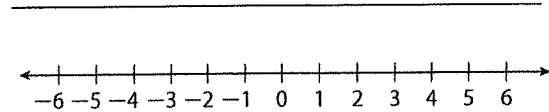
6. $|x-6| - 7 > -3$



7. $\frac{1}{2}|x+5| \geq 2$



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



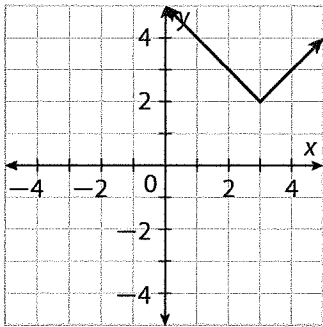
9. Ben says that there is no solution for this absolute-value inequality. Is he correct? If not, solve the inequality. Explain how you know you are correct.

$$32 + \frac{|x-7|}{13} < 7$$

LESSON 13-2

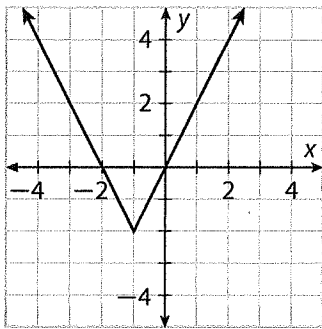
1. Sample table

x	$f(x)$
0	5
1	4
2	3
3	2
4	3
5	4



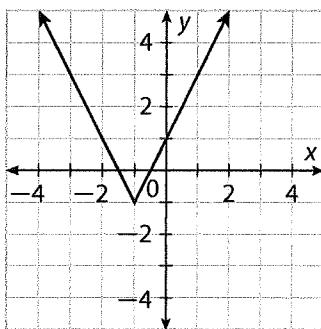
2. Sample table

x	$f(x)$
-4	4
-3	2
-2	0
-1	-2
0	0
1	2



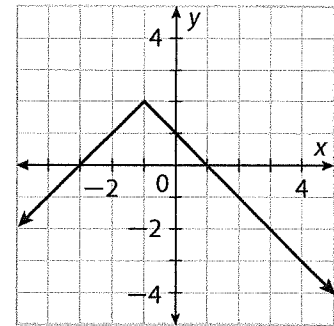
3. Sample table

x	$f(x)$
-4	5
-3	3
-2	1
-1	-1
0	1
1	3



4. Sample table

x	$f(x)$
-4	-1
-3	0
-2	1
-1	2
0	1
1	0



5. $f(x) = |x+1| + 1$

6. $f(x) = -|x-2| + 2$

7. $f(x) = |x+1| + 1$

8. $f(x) = |x-2| + 2$

LESSON 13-3

1. two

2. one

3. none

4. $x = -12$ or $x = 12$

5. $x = -\frac{1}{2}$ or $x = \frac{1}{2}$

6. $x = -10$ or $x = 10$

7. $x = -9$ or $x = 9$

8. $x = -8$ or $x = 8$

9. $x = -13$ or $x = 7$

10. $x = -\frac{3}{2}$ or $x = \frac{5}{2}$

11. no solution

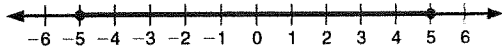
12. $x = -6.6$ or $x = 8.6$

13. $x = -0.25$ or $x = 0.75$

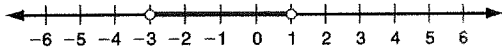
14. $x = -0.4$ or $x = 1.2$

LESSON 13-4

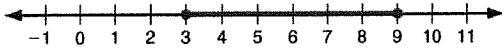
1. $x \geq -5$ and $x \leq 5$



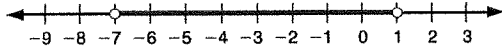
2. $x > -3$ and $x < 1$



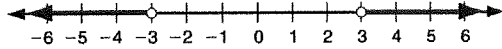
3. $x \geq 3$ and $x \leq 9$



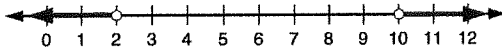
4. $x > -7$ and $x < 1$



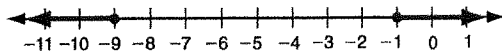
5. $x < -3$ or $x > 3$



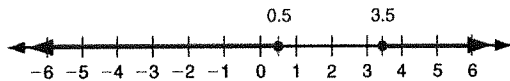
6. $x < 2$ or $x > 10$



7. $x \leq -9$ or $x \geq -1$



8. $x \leq 0.5$ or $x \geq 3.5$



9. 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 the expression to a negative number. Since absolute values are always positive, the inequality will have no solution.

