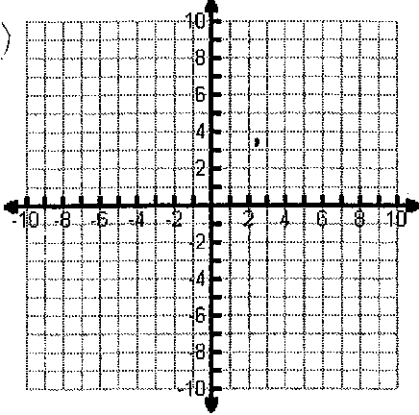
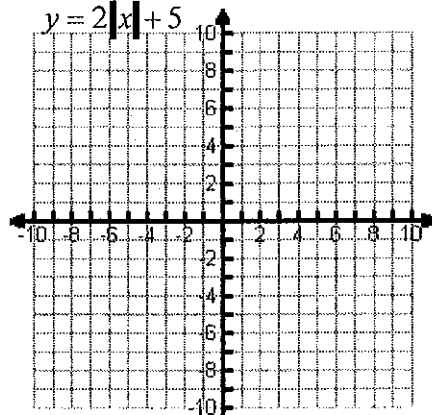


Graph the following:

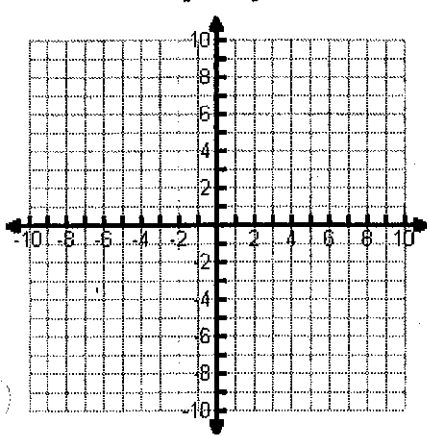
1. $y = |x - 3| + 2$



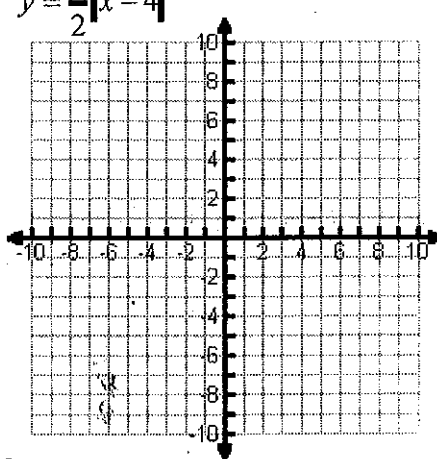
2. $y = 2|x| + 5$



2. $y = -3|x + 6| - 1$



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



_____ 5. Take the parent graph $y = |x|$, and write an equation that will shift the graph 6 units to the right and up 1 unit.

_____ 6. Take the parent graph $y = |x|$, and write an equation that will shift the graph 1 units to the left and a vertical reflection.

_____ 7. Take the parent graph $y = |x|$, and write an equation that will shift down 3 units and stretch by 4.

Describe all of the transformations

8. $f(x) = |x| - 9$

9. $f(x) = -3|x + 2| + 5$

10. $f(x) = -\frac{2}{3}|x + 6|$

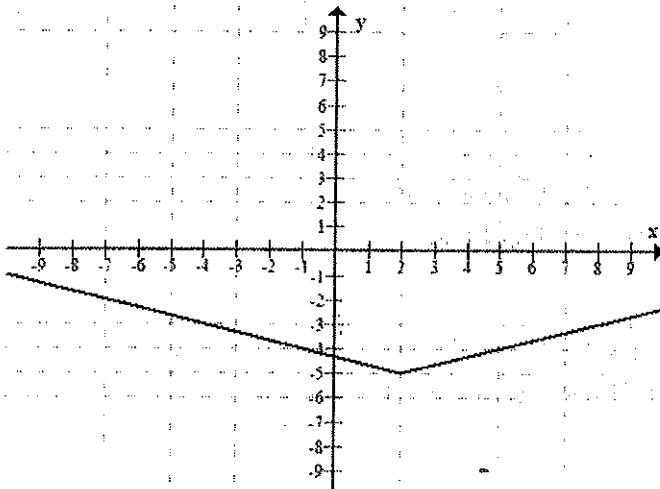
Write the function as a piecewise function.

11. $f(x) = -3|x + 1| + 4$

12. $f(x) = 2|x - 3| - 5$

Write the equation of each graph and give the characteristics.

13.



Equation:

Vertex:

Domain:

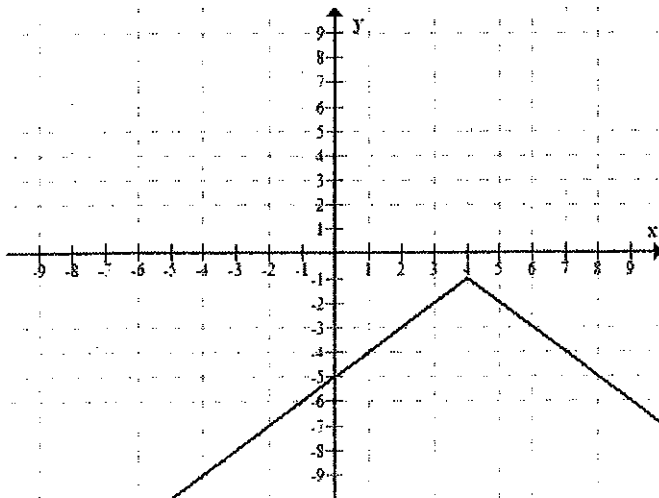
Range:

Inc. Int:

Dec. Int:

Extrema:

14.



Equation:

Vertex:

Domain:

Range:

Inc. Int:

Dec. Int:

Extrema:

Solve the following equations.

15. $|5x + 2| = 3$

16. $3|1 - 2x| + 6 = 21$

17. $|x - 7| + 10 = 4$

Solve and graph the following. Put the graph on the line provided next to the problem

18. $|6y - 9| \leq 3$

19. $|2x + 7| - 12 > 3$

20. $2|3x+7|+4 > 30$

21. $|2x-6|+4 < 2$

Use the formula $d = rt$ for distance traveled to solve for the missing variable.

22. $d = \underline{\hspace{2cm}}$, $r = 80$ miles per hour, $t = 4$ hours

23. Look for a pattern in the table. Then write an equation that represents the pattern.

| | | | | |
|-----|---|---|----|----|
| x | 0 | 1 | 2 | 3 |
| y | 5 | 1 | -3 | -7 |

Identify the domain and range of the given relation. Then tell whether the relation is a function. If the relation is a function tell whether it is a one-to-one function.

24. $(-3, 1), (-1, 4), (4, 2), (6, 3)$

domain: _____ range: _____

Function? _____ If yes, is it one-to-one? _____

25. $(-2, -1), (1, 4), (3, 5), (6, 4)$

domain: _____ range: _____

Function? _____ If yes, is it one-to-one? _____

26. $(-1, 1), (2, -3), (4, 2), (-1, 7)$

domain: _____ range: _____

Function? _____ If yes, is it one-to-one? _____

State if the following are linear or not linear

27. a) $4y - 2x = 12$

b) $3x - 7xy = 15$

c) $y = -\frac{2}{3}x - 1$

d) $y = 3x^2 - x - 8$

Given $f(x) = 2x^2 - 7x - 3$
 $g(x) = -5x + 4$ find the following:

28. $g(-6)$

29. $f(-3)$

30. $f(g(2))$

Write each absolute value equation as a piecewise function.

31. $y = -2|x + 7| - 5$

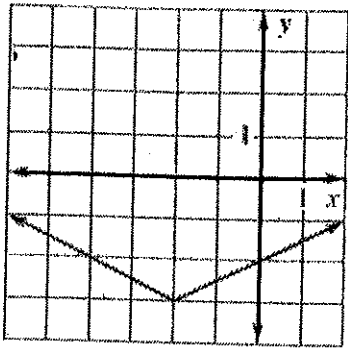
32. $y = 3|x - 4| + 11$

33. $y = -|x - 2| - 8$

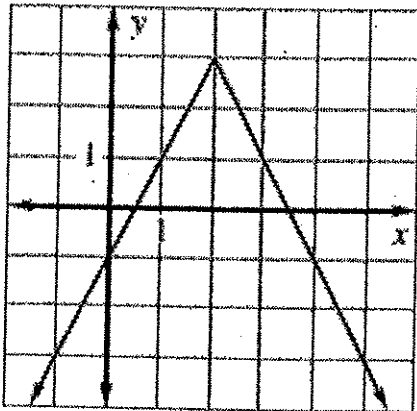
34. $y = 4|x + 9| + 3$

Write the equation for the absolute value graph.

35.



36.



37.

