

Linear Equations & Inequalities Review

Name: _____

In Exercises 1–14, Solve the equation by using the Properties of Equality.

1. $x + 8 = 11$

8. $6c + 3 = 45$

2. $5y - 9 = 16$

9. $11 - a = -23$

3. $x - 4 = 9$

10. $\frac{2}{3} + y = \frac{1}{4}$

4. $3y + 4 = 10$

11. $\frac{7}{8}w = 14$

5. $2(8 + k) = 22$

12. $-13 = 2b - b - 10$

6. $m + 5(m - 1) = 7$

13. $\frac{2}{3}x - \frac{5}{8}x = 26$

7. Susan can run 2 city blocks per minute. She wants to run 60 blocks. How long will it take her to finish if she has already run 18 blocks?

14. Michaela pays her cell phone service provider \$49.95 per month for 500 minutes. Any additional minutes used cost \$0.15 each. In June, her phone bill is \$61.20. How many additional minutes did she use?

In Exercises 15–24, Solve the equation for the indicated variable.

15. $x = 3y$ for y

20. $12r - 6s = t$ for r

16. $m + 5n = p$ for m

21. $\frac{h}{j} = 15$ for j

17. $21 = cd + e$ for d

22. $\frac{f-7}{g} = h$ for f

18. Formula for the perimeter of a rectangle: $P = 2a + 2b$, for b

23. Formula for the circumference of a circle: $C = 2pr$, for r

19. Formula for the sum of angles of a triangle: $A + B + C = 180^\circ$,
Solve for C

24. Formula for the volume of a cylinder: $V = pr^2h$, solve for h

In Exercises 25–30, Solve each inequality for the value of the variable.

25. $2x \geq 6$

28. $5(z + 6) \leq 40$

26. $\frac{a}{5} < 1$

29. $5x \geq 7x + 4$

27. $5x + 7 \geq 2$

30. $3(b - 5) < -2b$

In Exercises 31–36, Solve each compound inequality for the value of the variable.

31. $x > 2$ AND $x - 1 \leq 10$

34. $x - 1 > 11$ OR $3x \leq 21$

32. $3x + 1 \geq -8$ AND $2x - 3 < 5$

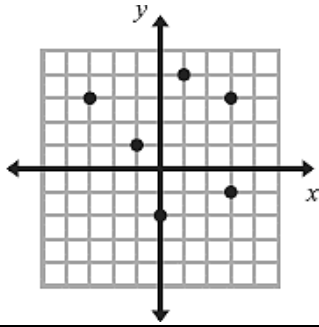
35. $70 < 3x + 10 < 100$

33. $x > 10$ OR $x < 0$

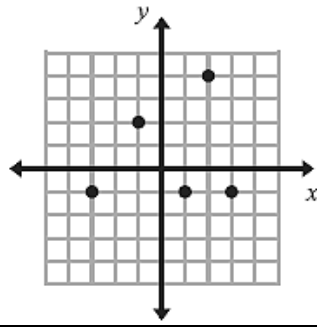
36. $2 > 2x - 14 > -14$

In Exercises 1–15, Decide whether the relation is a function.

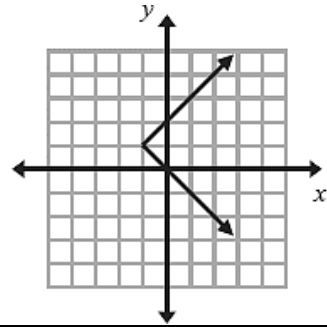
1.



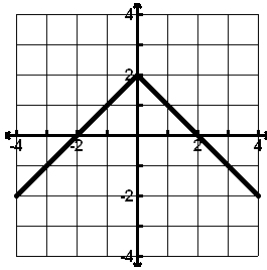
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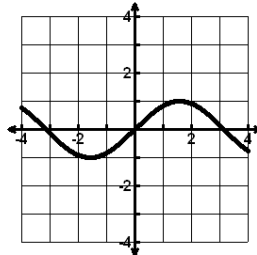
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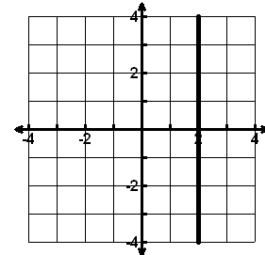
4.



5.



6.



7.

x	y
1	7
1	-7
2	8
2	-8

8.

x	y
3	2
5	4
7	4

9.

$(0,-6), (2,-4), (4,-2), (6,0)$

In Exercises 31–36, Evaluate the function for $f(3)$, $F(0)$, and $f(-2)$.

10. $f(x) = 2x - 5$

11. $h(x) = 6x + 2$

12. $f(x) = 2x^2 - 3$

In Exercises 31-31, If $f(x) = 2x - 3$, $g(x) = x^3 - 2$, and $h(x) = x^2 - 3x + 5$, find.

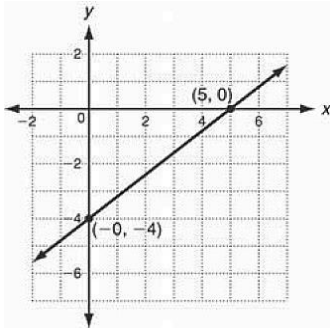
13. $f(x) + g(x)$

14. $h(x) - f(x)$

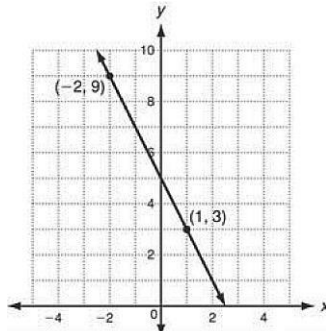
15. Find x if $f(x) = 23$

In Exercises 16–24, Find the slope of the line.

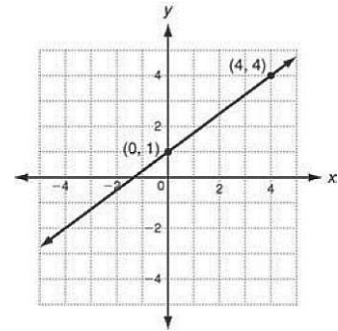
16.



17.



18.



19. $(4, 5)$ and $(11, 33)$

20. $(-4, 8)$ and $(3, -9)$

21. $(0, -8)$ and $(3, 3)$

22. $2x + y = 5$

23. $3x - 5y = 17$

24. $y = 4 - 9x$

In Exercises 25–28, Write the equation for each line in slope-intercept form. Then identify the slope and the y-intercept.

25. $4x + y = 7$

Equation: _____

Slope: _____

y-intercept: _____

26. $2x - 3y = 9$

Equation: _____

Slope: _____

y-intercept: _____

27. $5x + 1 = 4y + 7$

Equation: _____

Slope: _____

y-intercept: _____

28. $3x + 2y = 2x + 8$

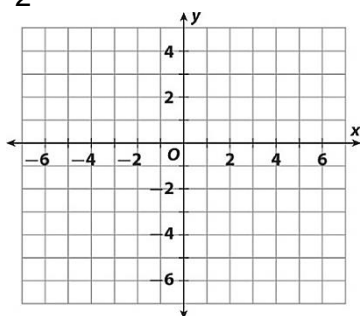
Equation: _____

Slope: _____

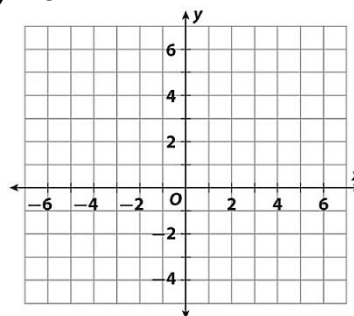
y-intercept: _____

In Exercises 29–32, Graph the equation.

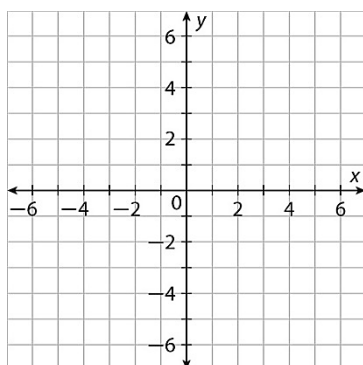
29. $y = \frac{1}{2}x - 3$



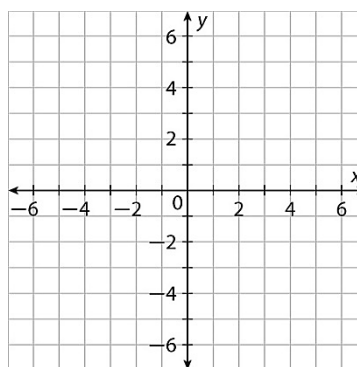
30. $2x + 3y = 8$



31. $y = -3x + 4$



32. $y = \frac{5}{6}x - 1$



In Exercises 33–38, Write an equation for the line in point slope form.

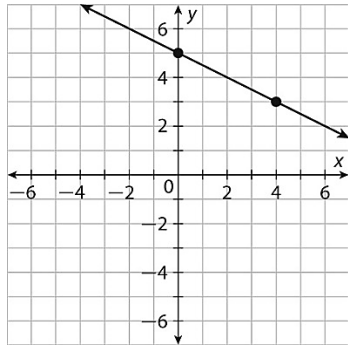
33. Line with a slope of 2 and passes through point (3, 5).

34. Line with a slope of -3 and passes through point $(-1, 7)$.

35. $(-6, 3)$ and $(4, 3)$ are on the line.

36. $(0, 0)$ and $(5, 2)$ are on the line.

37.



Slope:

X-intercept:

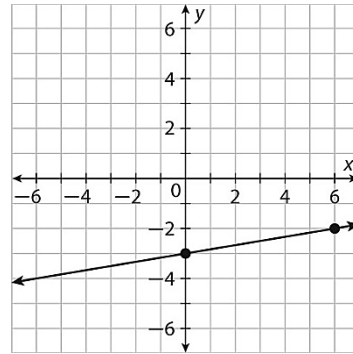
Y-intercept:

Equation:

Domain:

Range:

38.



Slope:

X-intercept:

Y-intercept:

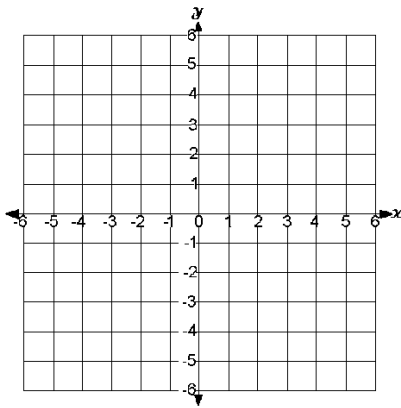
Equation:

Domain:

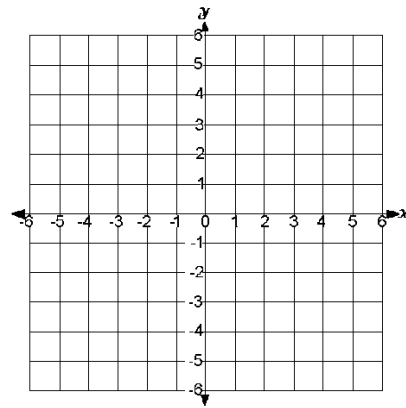
Range:

In Exercises 39-40, Graph the Inequality.

39. $y \leq x + 3$

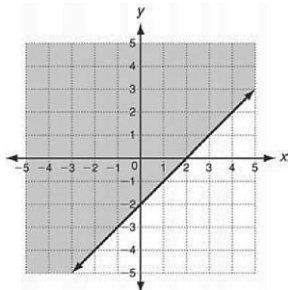


40. $y > -3x - 1$



In Exercises 41-42, Write an inequality for the graph.

41.



42.

