

**Skills
Practice****NBHCA Algebra 1B: Summer Work (Part 1) – DO NOT USE A CALCULATOR.****Add or subtract.**

1. $-9 + (-15)$

2. $2 + (-3)$

3. $6 - 9$

4. $-6 - 11$

5. $13 + 8$

6. $-12 - (-10)$

Multiply or divide.

7. $2(-7)$

8. $-8 \bullet 2$

9. $9 \div 3$

10. $25 \div (-5)$

11. $-30 \div (-6)$

12. $-1(-7)$

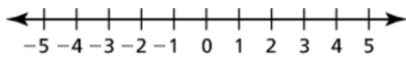
Solve the problem and specify the units of measure.

13. The length of a rectangle is 6 feet and the width is 3 feet. Find the perimeter of the rectangle.

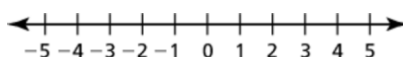
14. One side of a square measures 9 centimeters. Find the area of the square.

Graph the number.

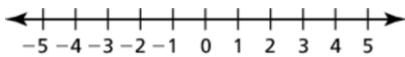
15. 4



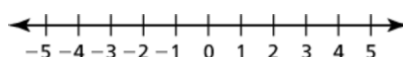
16. $|-3|$



17. $-6 + |5|$



18. $1 - |-3|$

**Complete the statement with $<$, $>$, or $=$.**

19. $3 \underline{\hspace{1cm}} 7$

20. $-1 \underline{\hspace{1cm}} 4$

21. $-4 \underline{\hspace{1cm}} -10$

22. $|-6| \underline{\hspace{1cm}} -3$

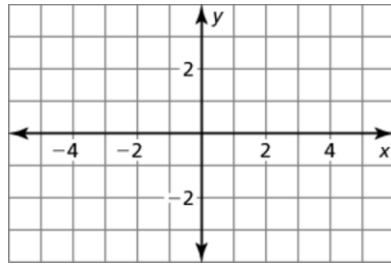
Evaluate the expression for the given value of x .

23. $-x - 12; x = 4$

24. $13 - 7x; x = -10$

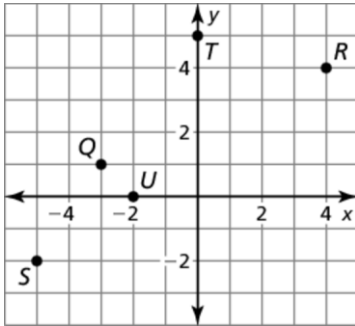
25. $11x + 17; x = -6$

Plot the point in the coordinate plane. Describe the location of the point.



26. $A(4, 2)$ 27. $B(-1, 3)$ 28. $C(-5, -3)$ 29. $D(3, 0)$

Use the graph to answer the question.



30. Which ordered pair corresponds to point U ?
 31. Which ordered pair corresponds to point S ?
 32. Which point is located in Quadrant II?

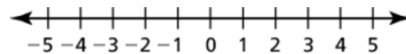
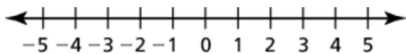
Solve the equation for y .

33. $2x - y = 3$ 34. $3x + 2y = -4$ 35. $-2x = 6y + 3$

36. $0 = 7x - y + 12$ 37. $-2y + x = 4y - 6$

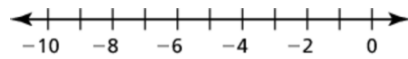
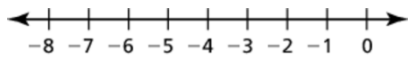
Solve the inequality. Graph the solution.

38. $p + 6 > 9$ 39. $3x - 4 < 2$



40. $-4m + 6 \leq 22$

41. $5x + 1 \leq 3x - 9$

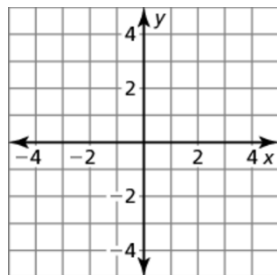
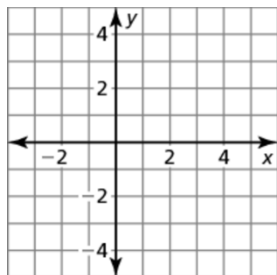
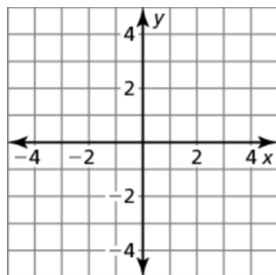


Graph the equation.

42. $y - 2 = 2x$

43. $2y + x = 8$

44. $2x - 3y = 6$



Evaluate the expression.

45. $14 \div 7 - 2^2 + (-3) \cdot 2 - 1$

46. $-4 - (3 + 6^2) \div 13 - 1^2 \cdot (-12)$

Find the square root(s).

47. $\sqrt{25}$

48. $-\sqrt{81}$

49. $\pm\sqrt{9}$

50. $-\sqrt{144}$

Write an equation for the n th term of the arithmetic sequence.

51. 3, 6, 9, 12, ...

52. 7, 0, -7, -14, ...

53. 2, 13, 24, 35, ...

Simplify the expression.

54. $7x - 1 + 2x$

55. $3m + 2 - 6m + 8 - 1$

56. $-4(2y - 1) + 3y - 7$

57. $3(d + 3) - (2d - 1) + 11d + 8$

Evaluate the expression when $x = -3$.

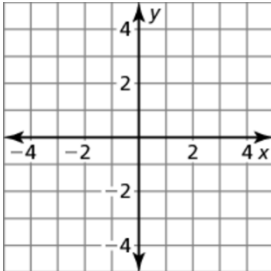
58. $3x^2 - 6$

59. $2x^2 - 6x + 1$

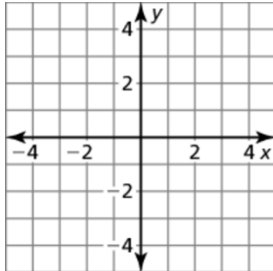
60. $-x^2 - 5x - 1$

Solve the system of linear equations by graphing.

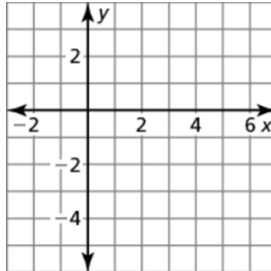
61. $y = 2x + 1$
 $y = -2x - 3$



62. $y = -\frac{1}{2}x + 1$
 $y = x + 1$



63. $y = \frac{2}{3}x - 4$
 $y = -\frac{4}{3}x + 2$



**Pre-
Course****NBHCA Algebra 1B: Summer Work (Part 2) – CALCULATOR is OKAY!**

Solve the equation. Check your solution.

1. $x - 12 = 9$

2. $2x + 7 = -5 + x$

Solve the equation.

3. $8|2 - 9p| - 2 = 14$

4. $-3(-6x + 6) + 6(4x - 3) = -78$

Describe the values of c for which the equation has no solution.

5. $5x + 4 = 5x - c$

6. $|2x + 6| = c$

Write the sentence as an inequality.

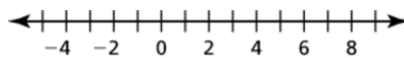
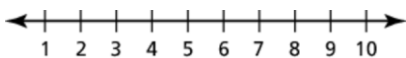
7. A number m increased by 12 is less than 48.

8. The product of x and 10 is greater than or equal to 23.

Solve the inequality. Graph the solution.

9. $-6x - (-7x - 1) \leq 6$

10. $2|2 - x| + 4 \leq 16$



Write and graph a compound inequality that represents the numbers that are *not* solutions of the inequality represented by the graph shown.



Determine whether the relation is a function. If the relation is a function, determine whether the function is *linear* or *nonlinear*.

13.

x	1	2	3	4	5
y	1	4	9	16	25

14. $y = 3x + 1$

Write an equation in slope-intercept form of the line with the given characteristics.

15. through: $(3, -3)$ and $(-3, 4)$

16. through: $(-3, 5)$, parallel to $y = 2x + 2$

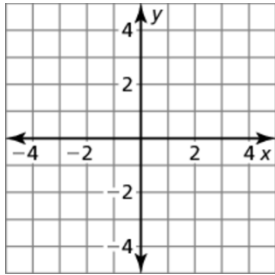
Write an equation in point-slope form of the line with the given characteristics.

17. through: $(5, -3)$, slope = $-\frac{1}{5}$

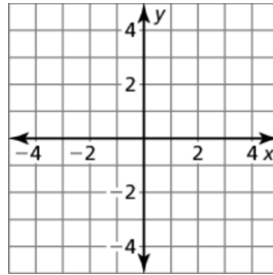
18. through: $(-4, 2)$, perpendicular to $y = \frac{2}{3}x - 2$

Graph the equation and identify the intercept(s). If the equation is linear, find the slope of the line.

19. $3x - 4y = 12$



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



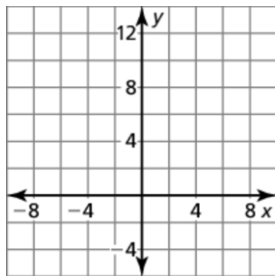
Describe the transformations from the graph of f to the graph of g .

21. $f(x) = x; g(x) = \frac{1}{2}x - 1$

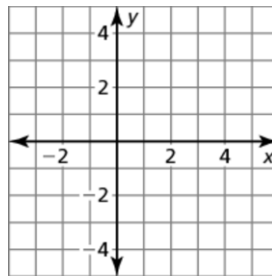
22. $f(x) = |x|; g(x) = 2|x + 3|$

Graph the function. Describe the domain and range.

23. $f(x) = \begin{cases} -x + 4, & \text{if } x < -2 \\ \frac{1}{2}x - 3, & \text{if } x \geq -2 \end{cases}$



24. $y = \begin{cases} -\frac{3}{2}x - 2, & \text{if } x \leq 0 \\ -2, & \text{if } 0 < x < 3 \\ x - 5, & \text{if } x \geq 3 \end{cases}$



Solve the system of linear equations using any method.

25. $-6x - 7y = 12$

$6x + 10y = 6$

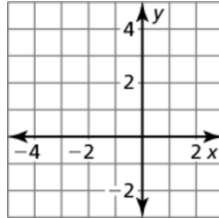
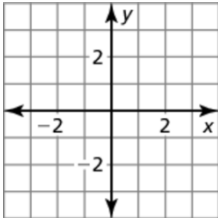
26. $7x + 2y = 29$

$\frac{1}{2}y = -1 + x$

Graph the system of linear inequalities.

27. $y \geq 2x - 3$
 $x + y < 3$

28. $x - 2y < -6$
 $x + 2y < 2$



Evaluate the expression. Round to the nearest hundredth, if necessary.

29. $\sqrt[4]{49}$

30. $-(216)^{1/6}$

31. $81^{5/4}$

Simplify the expression. Write your answer using only positive exponents.

32. $m^5 \cdot m^{-4} \cdot m^0$

33. $\frac{ab^{-2}}{b^{-4}b^3}$

34. $\left(-\frac{3x^3}{2y}\right)^{-2}$