

Algebra 1 – Summer Assignment

The purpose of this summer assignment is to review and strengthen mathematical skills essential for success in Algebra 1. The assignment consists of math concepts taught in previous courses you have taken. It is expected that you will complete this assignment on your own, to the best of your ability, and bring with you to the class the **FIRST day** of the semester.

You will be tested on the concepts of this packet within the first few days of class. All answers have been posted as an additional file for your reference. You should come prepared, ready to go, with specific questions for your teacher.

TUTORIAL HELP SITES: if you have difficulty, the following websites provide tutorials and videos to assist as you review:

<https://www.khanacademy.org/>

<http://www.purplemath.com/>

VARIABLES AND EXPRESSIONS

- | | | | |
|-----------------------------------|----------|----------------------------------|---------|
| a. 4 more than a number | $n + 4$ | b. five less than a number | $x - 5$ |
| c. three less than twice a number | $2y - 3$ | d. the product of 5 and a number | $5a$ |

WRITE AN ALGEBRAIC EXPRESSION FOR EACH VERBAL EXPRESSION

- seven more than a number _____
- two less than eight times a number _____
- the product of four and a number _____
- the quotient of number squared and three _____

ORDER OF OPERATIONS

Simplify using the order of operations.

5. $2 + 7 \times 5$

6. $(6 + 25 - 7) \div 6$

7. $(8 + 5) \times \frac{35}{5} + 6$

8. $(2 + 6 \times 2 + 2 - 4) \times 2$

EVALUATE THE FOLLOWING EXPRESSIONS

if $a = -2$, $x = -3$, $y = 4$, $c = 8$ (show some work – be careful!)

9. $3a^2 + xy$ _____

10. $y - 2c$ _____

11. $3x - 5a$ _____

12. $3y^2$ _____

13. $2x(y + c)$ _____

PROPORTIONS

Use cross products to solve each proportion.

14. $\frac{4}{7} = \frac{5}{x}$

15. $\frac{12.3}{h} = \frac{75}{100}$

16. There are 20 grams of protein in 3 ounces of fish. How many grams of protein are in 10 ounces of fish?

GRAPHING POINTS

Graph the following coordinates
on the graph and label them properly.

17. $A(-3, 0)$

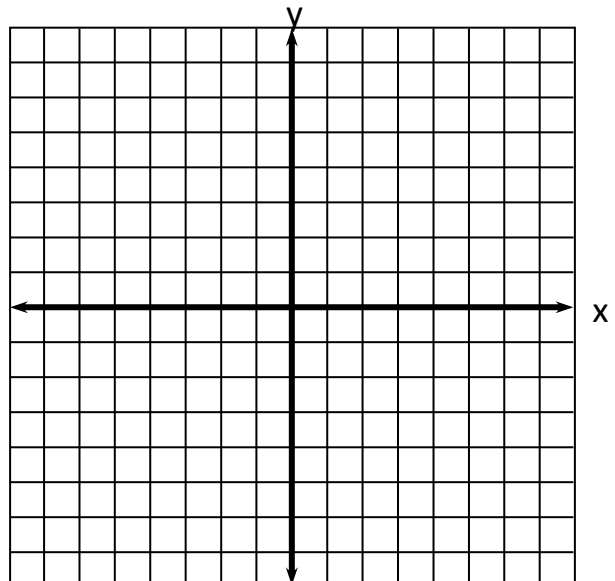
20. $D(6, -5)$

18. $B(0, 7)$

21. $E(4, 2)$

19. $C(-1, -3)$

22. $F(-5, 6)$



DISTRIBUTIVE PROPERTY.

Simplify.

23. $5(x - 4)$

24. $-2(x + 3)$

25. $-7(k - 3) + 11k$

26. $19a - (a + 6) + 8$

EQUATIONS

Solve each equation.

27. $x - 13 = -18$

28. $-12 = \frac{x}{4}$

29. $-119 = 7n$

30. $6(2b + 5) = 15 + 7b$

EXPONENTS

Simplify.

31. $-4n^2 \cdot -3n^4$

32. $-2x^3 \cdot 2xy$

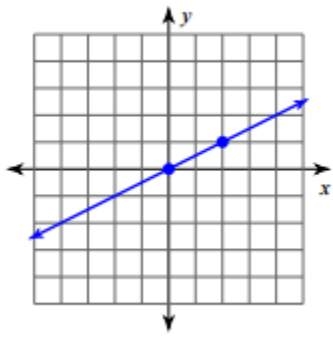
33. $\frac{48x^5}{3x^2}$

34. $(3ab^2)^4$

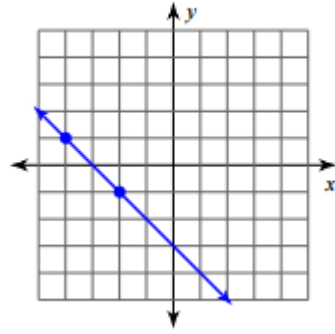
SLOPE

Find the slope of each line.

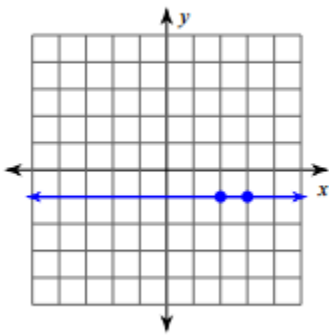
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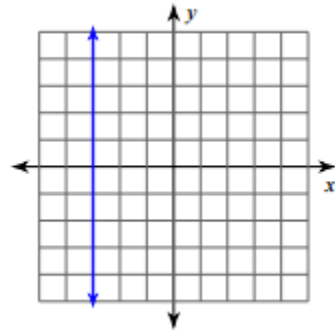
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37.



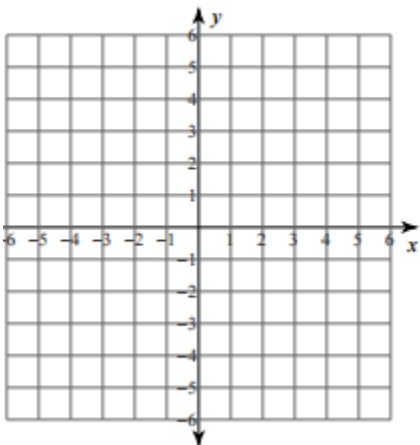
38.



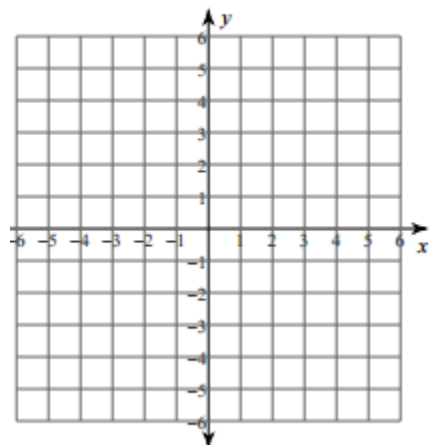
GRAPHING LINES

Sketch the graph of each line. Make a table of values for each.

39. $y = \frac{7}{2}x - 2$



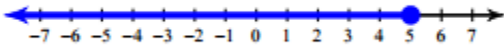
40. $y = -6x + 3$



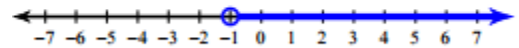
INEQUALITIES

Write an inequality for each graph.

41.

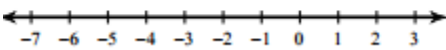


42.

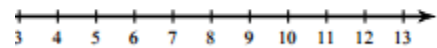


Solve and graph each inequality.

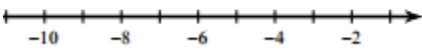
43.) $b - 7 < -12$



44. $-9x \geq -90$



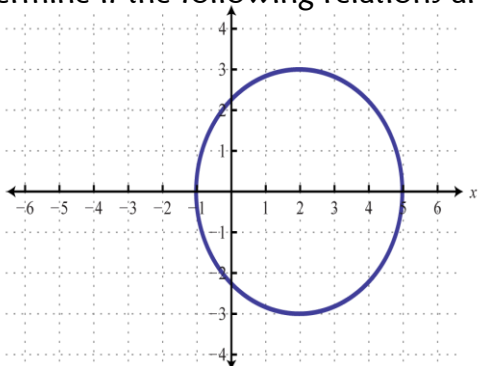
45. $a - 6 \leq 15 + 8a$



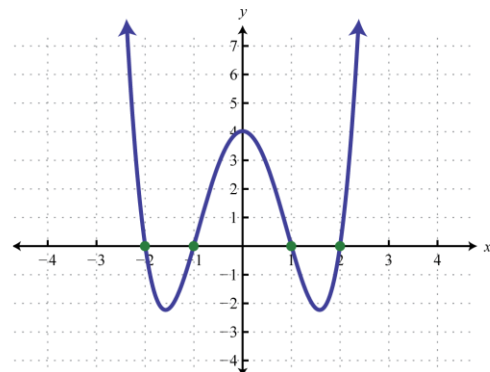
FUNCTIONS

Determine if the following relations are functions. Write yes or no.

46)



47)



48)

x	y
-2	4
-1	4
3	4
6	4

49)

x	y
-2	4
-2	5
0	10
3	14

50) a) Make a table for the function $f(x) = \frac{1}{2}x - 3$ given the domain of the function is $\{-2, 0, 4, 6\}$

x				
f(x)				

b) Identify the range of the function $\{\underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}\}$

c) Graph the function.

