

Dear Upcoming Algebra 1 Student,

As you prepare for your Algebra 1 class next year, we have a lot of intriguing topics to learn about, many of which will build upon your prior knowledge to help you create connections to new concepts! Please make sure to refresh your memory of important math skills over the summer through completing this packet. In September, you will be expected to be proficient in your knowledge and skills regarding the included concepts. There will be an assessment including these skills during the third or fourth week of September. Make sure to see your teacher for extra help if you have follow up questions. A strong conceptual understanding of these topics is essential for success. **Please complete all of the practice problems on white lined paper.**

After checking your answers, please retry any problems you had incorrect, and come to school with a list of specific questions relating to any of the ideas/problems in this packet. Our goal is to help you and prepare you, not to stress you! :) We are looking forward to an amazing year filled with learning! Have a wonderful summer!

Sincerely, The Cranford High School Math Department

*** Note: There are some supplemental video links on the next page.**

For Incoming Algebra Students

Evaluate each expression.

1) $(-6) + (-1)$

2) $1 + (-2)$

3) $(-8) - 1$

4) $1 - (-8)$

5) $(-7) - 6 + (-4)$

6) $(-3) - (-6) - 2$

7) $4 - 4 - 7$

8) $(-3) - 6 - (-5)$

9) $|4|$

10) $|-7|$

11) $\sqrt{81}$

12) $\sqrt{64}$

Find each product.

13) $(-3)(-9)$

14) $(8)(-7)$

15) $(-10)(-1)(-10)$

16) $(3)(8)(-3)$

17) $-5 * 0$

18) $-5 * -1$

Find each quotient.

19) $\frac{-8}{-1}$

20) $-6 \div -2$

21) $12 \div -6$

22) $\frac{-30}{3}$

23) $\frac{3}{0}$

24) $\frac{0}{9}$

Evaluate each expression.

25) $-4 + -5 - (-6 - -5)$

26) $-6 - |2 - 6|$

27) $\frac{3 - -5}{-4 \cdot -1}$

28) $(-3)^2 |6|$

Find each sum.

29) $\frac{7}{8} + \frac{3}{2}$

30) $\frac{1}{4} + 2\frac{1}{2}$

Find each difference.

31) $\frac{5}{7} - \frac{1}{2}$

32) $4\frac{3}{8} - \frac{1}{2}$

Find each product.

33) $1\frac{2}{5} \cdot \frac{1}{4}$

34) $2 \cdot \frac{5}{6}$

Find each quotient.

35) $\frac{1}{3} \div \frac{5}{8}$

36) $\frac{1}{2} \div 2$

Simplify each expression.

37) $-9b + 9b$

38) $5k - 2 + 4k - 7$

39) $-5(n - 10)$

40) $-10(1 + 10r)$

41) $-p + 7(5 + 5p)$

42) $-7(10x - 6) - 2(8 + 5x)$

Solve each equation.

43) $b - 20 = -20$

44) $p - 12 = -20$

$$45) -27 = x - 16$$

$$46) 20x = 300$$

$$47) \frac{a}{18} = 12$$

$$48) \frac{k}{11} = -14$$

$$49) \frac{x}{7} - 6 = -8$$

$$50) -2m - 6 = 34$$

$$51) \frac{x - 10}{3} = -7$$

$$52) 4(x + 8) = 88$$

$$53) 127 = -x + 4(5x + 8)$$

$$54) 105 = -5(-2v - 5)$$

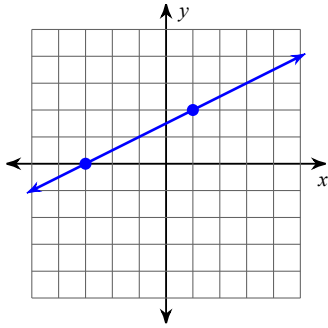
$$55) 224 = 6(3k + 4) + 7k$$

$$56) v + 9 = 2v + 6$$

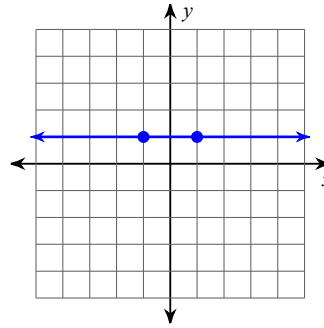
$$57) 2 - 2m = -14 + 2 + m - 7$$

Find the slope of each line.

58)



59)



Find the slope of the line through each pair of points.

60) $(14, 0), (-11, -7)$

61) $(3, 15), (17, 5)$

Find the slope of each line.

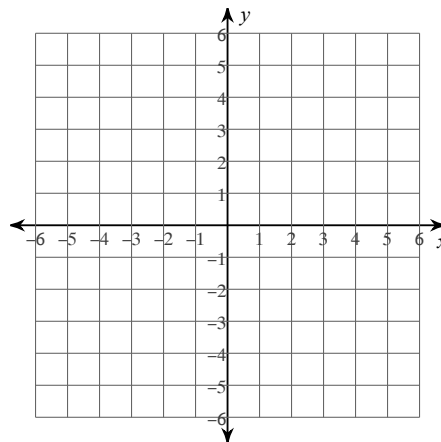
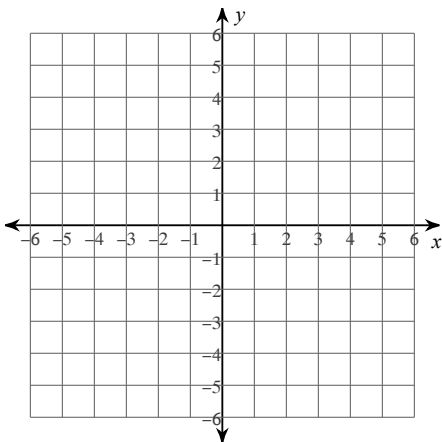
62) $y = x + 1$

63) $y = -\frac{1}{5}x + 1$

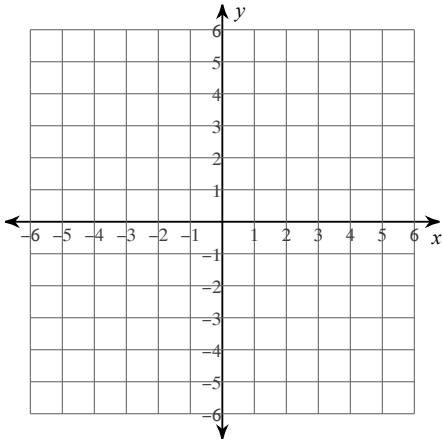
Create an xy table of values and substitute x values to obtain at least four y values. Plot the points and sketch the line.

64) $y = \frac{1}{2}x + 3$

65) $y = -\frac{5}{4}x$



66) $y = 1$

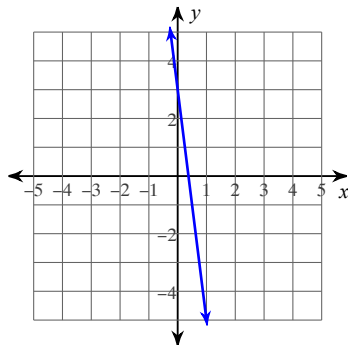


67) Consider the line $x = 2$. Is this vertical or horizontal? Is the slope undefined or zero?

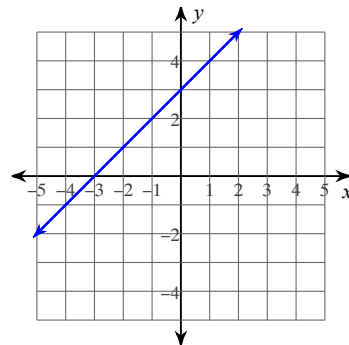
68) Consider the line $y = 5$. Is this vertical or horizontal? Is the slope undefined or zero?

Write the slope-intercept form of the equation of each line.

69)



70)



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

71) Slope = $\frac{7}{4}$, y-intercept = 2

72) Slope = 9, y-intercept = -5

Write the slope-intercept form of the equation of each line.
That is, isolate y so you have $y = mx + b$ form.

73) $7x + 4y = -20$

74) $x + 7y = -7$

Write each as an algebraic expression.

75) the sum of 11 and b

76) the product of q and 10

77) the quotient of p and 5

78) half of n

79) the difference of 30 and x

80) 8 less than u

81) n less than 24

82) 5 squared

Solve each proportion.

83) $\frac{n}{2} = \frac{4}{8}$

84) $\frac{6}{m} = \frac{8}{2}$

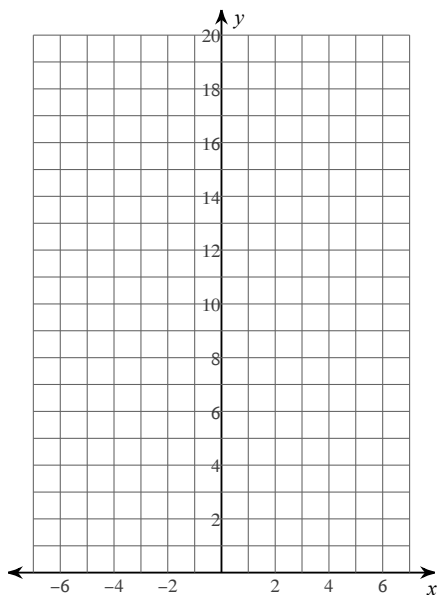
Solve each problem.

85) What percent of 135 is 121?

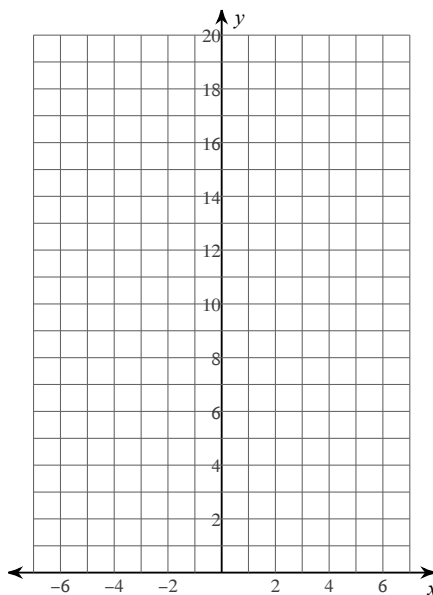
86) 68 is what percent of 135.5?

Create an xy table of values and substitute x values to obtain at least four y values. Plot the points and sketch the function.

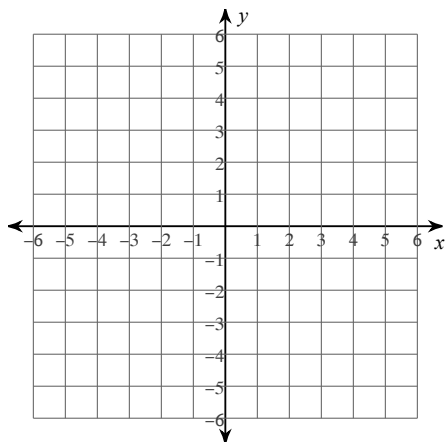
87) $y = 2 \cdot 3^x$



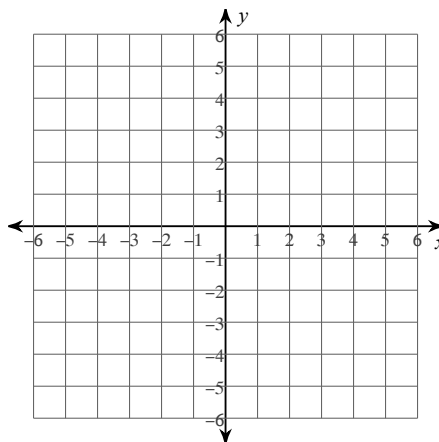
88) $y = 4 \cdot 2^x$



89) $y = |x + 1| + 3$



90) $y = |x| - 1$



Helpful Videos for Algebra 1 Summer Assignment

#1-8: [Adding and Subtracting Integers](#)

#9-10: [How to Find the Absolute Value of a Number](#)

#11-12: [Understanding square roots \(video\) | Khan Academy](#)

#13-24: [Multiplying and Dividing Integers: A Step-By-Step Review | How to Multiply and Divide Integers](#)

#25-28: [Order of Operations Review](#)

#29-32: [Adding and subtracting fractions and mixed numbers | Foundation and Higher GCSE | JagersMaths](#)

#33-36: [Multiplying & Dividing Fractions and Mixed Numbers](#)

#37-42: [Combining Like terms and Distributive Property](#)

#43-48: [How to Solve One-Step Equations | One-Step Equation Steps | Math with Mr. J](#)

#49-57: [Solving Two Step and Multi Step Equations](#)

#58-63: [Finding Slope Review](#)

#64-65: [Graph from slope-intercept equation \(video\) | Khan Academy](#)

#66-68: [How to Graph Linear Equations: Vertical & Horizontal](#)

#69-70: [How To Find The Equation of a Line From a Graph | Algebra](#)

#71-74: [Write Equations of Lines Given Slope and y-intercept](#)

#75-82: [Writing algebraic subtraction expressions \(video\) | Khan Academy](#)

#83-84: [Proportions | Solving Proportions with Variables](#)

#85-86: [Finding a Percent of a Number | Calculating Percentages](#)

#87-88: [Exponential function graph | Algebra \(video\) | Khan Academy](#)

#89-90: [Graphing absolute value functions \(video\)](#)