

INCOMING ALGEBRA
SUMMER MATH
2017-2018

Name: _____

Please complete this mathematics packet over the summer. Show all work and do not use a calculator. The packet with all the work will be collected during your first mathematics class of the school year and it will be graded as a quiz for the first marking period.

It is advisable that you complete the packet a little at a time throughout the summer.

You may use Khan Academy for help.

Simplify. Write as an improper fraction. Show all work for credit.

1. $\frac{11}{5} + \frac{7}{3} =$

2. $\frac{8}{7} - \frac{1}{9} =$

3. $5 - \frac{9}{4} =$

4. $\frac{6}{12} + \frac{7}{8} =$

5. $\frac{4}{5} \cdot \frac{15}{16} =$

6. $6 \cdot \frac{4}{9} =$

7. $12 \div \frac{1}{4} =$

8. $\frac{9}{8} \div \frac{3}{8} =$

9. Maria ate $\frac{2}{3}$ of a pizza that had 12 pieces. How many pieces did Maria eat?

10. George rode his bike $1\frac{3}{4}$ of a mile to the store. He then rode his bike $2\frac{1}{2}$ miles to his friend's house. How far did he ride altogether?

11. Steve walked $3\frac{1}{4}$ miles on Tuesday and $4\frac{2}{3}$ miles on Thursday. How many more miles did he walk on Thursday than Tuesday?

Find the missing number.

12. $\frac{10}{15} = \frac{x}{60}$

13. $\frac{4}{15} = \frac{20}{x}$

14. 12 out of 13 boys in a group like hamburgers. If the number of boys in the group increased to 65, how many would you expect to like hamburgers?

15. 4 out of 5 doctors recommend at least 30 minutes of exercise a day. A total of 80 doctors recommend 30 minutes of exercise a day. How many doctors did they interview altogether?

Write the following as a decimal.

16. $\frac{19}{20}$

17. $1\frac{1}{50}$

18. Robert came in first for $\frac{3}{4}$ of his races. Express the fraction as a decimal.

Write the fraction as a decimal. State whether the decimal is terminating or repeating.

19. $\frac{3}{4}$

20. $\frac{2}{7}$

Solve the following.

21. $w + \frac{1}{5} = \frac{7}{8}$

22. $h + \frac{3}{8} = -\frac{1}{4}$

23. $15\frac{3}{4} = t + 4\frac{5}{8}$

24. $6a = \frac{5}{7}$

25. $\frac{3}{7}h = 9$

26. $\frac{2}{7}a = \frac{8}{5}$

27. $-\frac{1}{3}p = \frac{3}{5}$

28. Mr. Smith needs a shelf to hold a set of textbooks, each $1\frac{1}{4}$ in. wide. How many books will fit on a 35 in. long shelf?

29. You have a 90 lb. calf you are raising for a 4-H project. You expect the calf to gain 65 lbs. per month. In how many months will the animal weigh 1000 lbs.?

30. A student works at a job which pays \$6 per hour. This week the student also received a bonus of \$50. If the total pay for the week was \$284, how many hours did the student work?

Simplify each expression.

31. $-14 + 22$

32. $-55 - 18$

33. $65 - 119$

34. $13 - (-34)$

35. $-12 \cdot 4$

36. $-16 \cdot (-3)$

37. $\frac{-72}{8}$

38. $\frac{4+6}{5}$

39. Angus Burgers had the following profits and losses over a 3-month period were: July: $-\$3,515$; August: $-\$5,674$, September $\$8993$. What was the companies' overall profit or loss?

40. An airplane descends at a velocity of -14 in/sec. Find the vertical distance traveled in 7.5 seconds?

Solve the equation.

41. $2x - 26 = 10$

42. $-6 + 3x = -9$

43. $\frac{x}{5} + 9 = 4$

44. $-3x + 6 = -9$

45. $x + 7 = 6x - 3$

46. $x - 9 = -6x + 5$

47. $-6p - 21 = 3p - 12$

48. $\frac{1}{4}y - 3 = 9$

49. Four friends dining in a restaurant decide to split the bill evenly between them. Each person will pay \$9.45. How much is the total bill?

50. A family is going to Disneyland, the family pack of tickets costs \$348.00 for a total of four people. If each person can go for 3 days, how much does it cost each person per day to go?

51. A rental store will rent a lawn mower for \$6 per hour with a \$10 rental fee, or it can be rented for \$46 per day, with no rental fee. Under what circumstance would it be better to rent per hour?

Simplify the expression.

52. 3^3

53. $(-6)^2$

54. 1^4

55. 2^5

56. The floor of a room is 14 feet long by 14 feet wide. How many square feet of a carpet are needed to cover the floor?

Evaluate the expression.

57. $x - 4$, when $x = -1$

58. $-x + 6$, when $x = 9$

59. $x^2 + 3$, when $x = 5$

60. $-x^2 - 1$, when $x = 4$

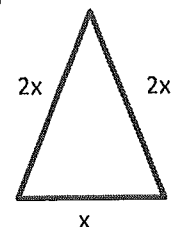
61. $-x^2 + x$, when $x = -2$

62. $\frac{x-5}{x}$, when $x = 10$

63. $\sqrt{x} + 2\sqrt{y} + 3\sqrt{xy}$, when $x = 4$, $y = 9$

64. $2[x + x(3y - x)]$, when $x = 3$, $y = 2$

65. Find the perimeter of the triangle when $x = 3$



66. $3x^2 + (2y + z^3)$, when $x = 4, y = 5, z = 3$

67. $\frac{2a - b^2}{ab} + \frac{c - a}{b^2}$, when $a = 8, b = 4, c = 16$

Simplify each expression using the order of operations.

68. $-14 \div 6 \cdot 3$

69. $(8 - 2)^2 + 9$

70. $3^2 - 16 \div 2 + 1$

71. $4 \cdot 2 \div (50 - 2)$

72. $-(3)^2 + 3 - 4$

73. $-5 + 2(4 \div 8)$

74. $\frac{3^3 + 8 - 7}{2 \cdot 7}$

75. $\frac{5^2 \cdot 2}{1 + 6^2 - 12}$

76. $12 + 3[4(8 - 6) + 5(4 + 2)]$

77. $(2 + \sqrt{9})^2 + 5(\sqrt{64} - \sqrt{16})^2$

Simplify the expression using the distributive property.

78. $4(x - 2)$

79. $3(x + 5)$

80. $-(x - 7)$

81. $-5(2x + 3)$

Simplify by combining like terms.

82. $2x + 4x - 3x$

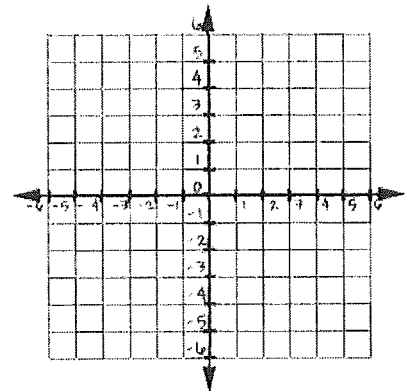
83. $-x + 2 + 8x$

84. $-3(x - 8) - 4x$

Graph the points and connect to create a line.

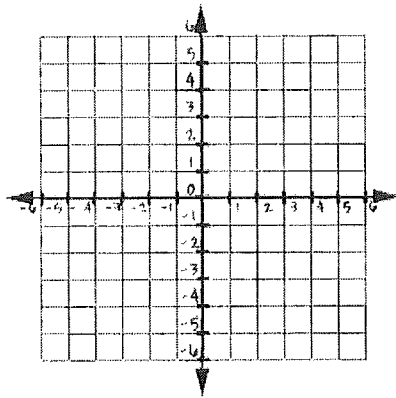
85.

x	y
-1	-1
0	1
1	3



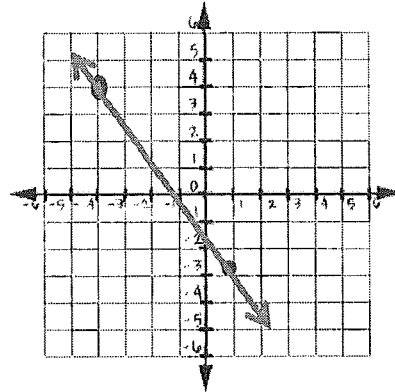
86.

x	y
-3	-3
0	-4
3	-5



Find the slope.

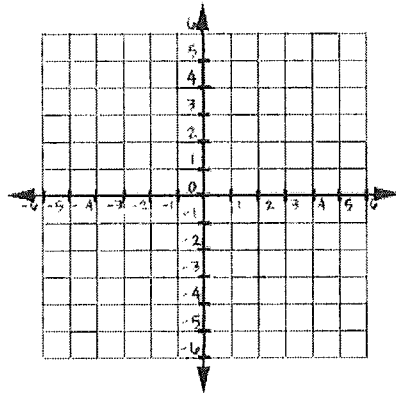
89.



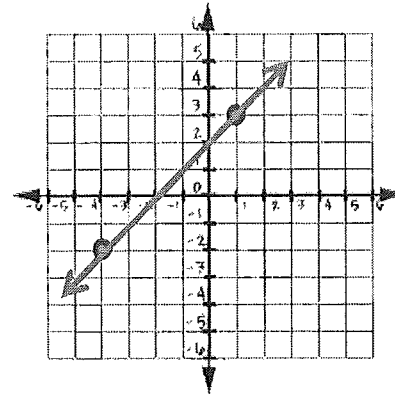
Graph the equation using a table of values.

87. $y = 3x + 2$

x	y



90.



Find the area and perimeter of the following shapes.

91. Rectangle

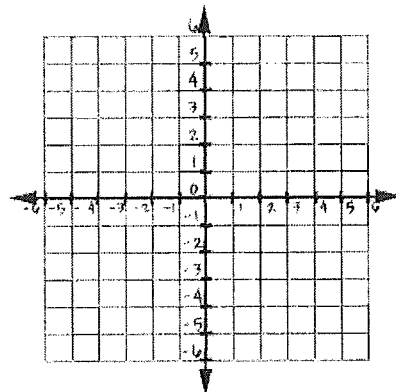


10

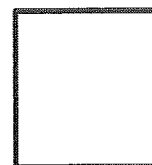
6

88. $y = -x - 3$

x	y

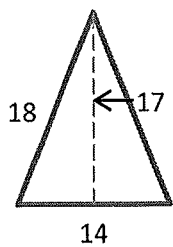


92. Square

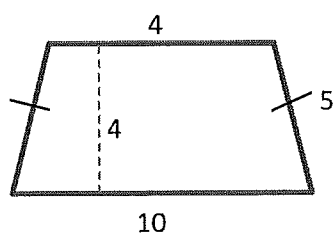


12

93. Isosceles Triangle



94. Trapezoid



95. Circle

