



2017 Summer Math Packet for students who have completed Algebra I

Congratulations, you made it through your math class this year! Your fabulous prize will be an even more challenging and interesting math class for next year. Yay!

Here is a packet to do over the summer to keep your math skills sharp, because we want you to be ready for your new math class in the fall. Do the indicated page(s) each week during the summer. You will find dates on the pages.

Complete your summer packet on separate paper without using a calculator, and remember to show all of your work. Do not do the whole packet right away, or you will forget some of the concepts before the fall. Do not leave the packet until the end of the summer, or you will have forgotten some of the concepts.

You have learned how to do everything in this packet at some point during the year, there is nothing new. Use your notes to help you with the packet. If you get completely stuck, then give one of us a call.

Bring the packet with you to your new math class in the fall. You will have a quiz during the first week of class to make sure you have done the packet and are ready for your new math class. Your math teacher might even give you extra credit for your summer math packet. Who doesn't love extra credit?

Have a wonderful and slightly mathematical summer!

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1. Solve for the variable.
 $8a - 3(a + 8) = 66$
2. Find the intersection point using substitution or elimination.
 $x = y + 8$
 $y - 3x = 10$
3. Find the x -intercept, the y -intercept, and the rate of change.
 $y = -5(x - 2) + 3$
4. Make a table and graph for the following symbolic rule.
 $y = 3x - 9$
5. Write four symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line with a y -intercept of 12 and rate of change of 4.
6. Use DPOM to convert point-slope into slope-intercept form.
 $y = 6(x + 7) - 5$
7. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.
85 vehicles with a total of 188 wheels registered for the bike/trike race. How many were bicycles and how many were tricycles?
8. Set up a proportion to help you solve the following problem.
In Spanish class, the girl to boy ratio is 5 to 8. If there are a total of 65 students, how many girls are there?
9. Solve the inequality and graph the solution on a number line.
 $-6x \geq 24$
10. What is the perimeter of a circle with a radius of 2 cm? Write your answer as exact and an estimate to the nearest hundredth.

11. Solve for the variable.

$$\frac{4}{9} - \frac{2}{5}b = 4$$

12. Find the intersection point using substitution or elimination.

$$c + 2d = 14$$

$$c - 3d = -11$$

13. Find the x -intercept, the y -intercept, and the rate of change.

$$2x + 6y = 4$$

14. Make a table and graph for the following symbolic rule.

$$y = 3(x + 6)$$

15. Write four symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line with an x -intercept of 3 and rate of change of -2.

16. Factor slope-intercept form in order to convert to x -intercept form.

$$y = -19x + 12$$

17. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

A large bow takes 5 feet of ribbon and a small bow takes 3 feet. 150 feet of ribbon is available to make 36 bows. How many bows of each size can be made?

18. Set up a proportion to help you solve the following problem.

The scale on a map is 8 cm: 2 km. If the distance between two cities is 10 km, how far apart are these two cities on the map?

19. Solve the system of inequalities and graph the solution.

$$y \geq 2x + 3$$

$$y < -2x - 1$$

20. What is the perimeter of a circle with a diameter of 7.5 inches? Write your answer as exact and an estimate to the nearest hundredth.

21. Solve for the variable.

$$\frac{1}{4}e + 2 = \frac{3}{4}$$

22. Find the intersection point using substitution or elimination.

$$g = 2f + 10$$

$$2g + 5f = 11$$

23. Find the x-intercept, the y-intercept, and the rate of change.

$$y = 2(x + 4) - 7$$

24. Make a table and graph for the following symbolic rule.

$$y = -5(x - 2) + 3$$

25. Write 4 symbolic rules in different forms (slope-intercept, x-intercept, point-slope, standard) for a line with a rate of change of 5 which goes through the point (4,-2).

26. Use DPOM to convert point-slope form into slope-intercept form.

$$y = \frac{4}{9}(x + 12) - \frac{5}{6}$$

27. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

DVD's are on sale for \$8 each. Blu-ray's are on sale for \$9 each. Rene spent \$110 of her birthday money and bought 13 sale items. How many DVD's and how many Blu-ray's did she buy?

28. Set up a proportion to help you solve the following problem.

Vera and Valerie are doing a homework assignment together. Vera does 12 problems every 5 minutes, and Valerie does 21 problems every 10 minutes. When they have done 90 problems together, how many problems has Vera done?

29. Solve the inequality and graph the solution on a number line.

$$|x| - 4 > 3$$

30. What is the area of a circle with a radius of 7 meters? Write your answer as exact and an estimate to the nearest hundredth.

31. Solve for the variable.

$$\frac{2}{3}(8h - 15) = \frac{7}{9}$$

32. Find the intersection point using substitution or elimination.

$$2i - 6j = -8$$

$$4i + 12j = 8$$

33. Find the x-intercept, the y-intercept, and the rate of change.

$$4x - 3y = 15$$

34. Make a table and graph for the following symbolic rule.

$$y = 4x + 16$$

35. Write 4 symbolic rules in different forms (slope-intercept, x-intercept, point-slope, standard) for a line with a rate of change of -2 which goes through the point $(-1, 8)$.

36. Factor slope-intercept form in order to convert to x-intercept form.

$$y = -2x + \frac{6}{36}$$

37. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

A collection of 31 nickels and dimes has a value of \$2.65. How many nickels and how many dimes are there?

38. Set up a proportion to help you solve the following problem.

A plane flew at a constant speed and traveled 760 miles in 5 hours. How many miles could the plane travel in 3 hours?

39. Solve the system of inequalities and graph the solution.

$$y < -2x + 1$$

$$y \geq x + 1$$

40. What is the area of a circle with a diameter of 11 mm? Write your answer as exact and an estimate to the nearest hundredth.

41. Solve for the variable.

$$2(k+1)-4=18$$

42. Find the intersection point using substitution or elimination.

$$4m-l=-1$$

$$l=6m$$

43. Find the x-intercept, the y-intercept, and the rate of change.

$$y=-\frac{1}{2}(x-5)-2$$

44. Make a table and graph for the following symbolic rule.

$$y=-1(x-8)$$

45. Write 4 symbolic rules in different forms (slope-intercept, x-intercept, point-slope, standard) for a line that is parallel to the line which goes through the points (2,5) and (-4,-7), and goes through the origin.

46. Use DPOM to convert x-intercept form into slope-intercept form.

$$y=-\frac{7}{9}\left(x+\frac{27}{14}\right)$$

47. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

There are 40 animals in the barn. Some are chickens and some are cows. There are 126 legs in all. How many of each animal are there?

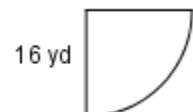
48. Set up a proportion to help you solve the following problem.

Robin can clean 72 rooms in 6 days. How many rooms can she clean in 9 days?

49. Solve the inequality and graph the solution on a number line.

$$9-4d\geq-3$$

50. What is the area and perimeter of the partial circle to the right? Write your answers as exact and an estimate to the nearest hundredth.



51. Solve for the variable.

$$\frac{5}{6}n + \frac{1}{3} = \frac{1}{2}$$

52. Find the intersection point using substitution or elimination.

$$4o + 10p = 13$$

$$6o + 30p = 21$$

53. Find the x -intercept, the y -intercept, and the rate of change.

$$x - y = -4$$

54. Make a table and graph for the following symbolic rule.

$$y = 2(x + 4) - 7$$

55. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line which goes through the point $(-6, -4)$ and the point $(3, 8)$.

56. Factor slope-intercept form in order to convert to x -intercept form.

$$y = \frac{22}{6}x + 33$$

57. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

“My son’s years and mine make fifty-nine. When he came to be, I was just twenty-three. How old are we?”

58. Set up a proportion to help you solve the following problem.

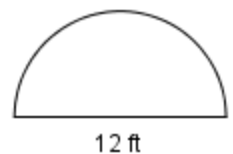
Charles can type 675 words in 9 minutes. How many words can he type in 13 minutes?

59. Solve the system of inequalities and graph the solution.

$$x > y$$

$$y < -2$$

60. What is the area and perimeter of the partial circle to the right? Write your answers as exact and an estimate to the nearest hundredth.



61. Solve for the variable.

$$4 + \frac{1}{2}q = 10 + q$$

62. Find the intersection point using substitution or elimination.

$$8r + 9s = 16$$

$$s = r - 2$$

63. Find the x -intercept, the y -intercept, and the rate of change.

$$y = 1.5(x + 4) - 3$$

64. Make a table and graph for the following symbolic rule.

$$y = -2x + 11$$

65. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line which goes through the point $(1, 3)$ and has a rate of change of 2.

66. Use DPOM to convert point-slope form into slope-intercept form.

$$y = -5(x - 2) + 3$$

67. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

Jami and Mami together have \$32. Jami said, "If you give me \$5, we'll each have the same amount." How much did each one have?

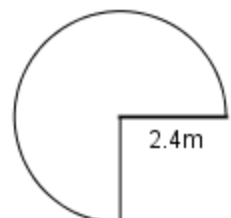
68. Set up a proportion to help you solve the following problem.

A gumball machine contains 23 green gumballs, 52 red gumballs, 34 blue gumballs, 61 yellow gumballs, and 30 pink gumballs. What percentage of the gumballs is red?

69. Solve the inequality and graph the solution on a number line.

$$-3|x| \leq 15$$

70. What is the area and perimeter of the partial circle to the right? Write your answers as exact and an estimate to the nearest hundredth.



71. Solve for the variable.

$$5(t + 3) - (t - 3) = t + 1$$

72. Find the intersection point using substitution or elimination.

$$10u + 12v = 28$$

$$-8v + 6u = 32$$

73. Find the x -intercept, the y -intercept, and the rate of change.

$$x + 2y = -5$$

74. Make a table and graph for the following symbolic rule.

$$y = 7(x - 8)$$

75. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line which has a y -intercept of $(0, 3)$ and an x -intercept of $(6, 0)$.

76. Factor slope-intercept form in order to convert to x -intercept form.

$$y = 12x - 48$$

77. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

Suppose you bought supplies for a party. Three rolls of streamers and 15 party hats cost \$30. Later, you bought 2 rolls of streamers and 4 party hats for \$11. How much did each roll of streamers cost? How much did each party hat cost?

78. Set up a proportion to help you solve the following problem.

Challenger Middle School has 800 students. Every Wednesday, 12% of the students stay after school for Chess Club. How many students attend Chess Club on Wednesdays?

79. Solve the system of inequalities and graph the solution.

$$y > 3$$

$$3y \leq 6x - 9$$

80. What is the volume of a cylinder with a height of 6 inches and the area of the base of 9π square inches? Write your answers as exact and an estimate to the nearest hundredth.

81. Solve for the variable.

$$3(w+7)=2(w+9)$$

82. Find the intersection point using substitution or elimination.

$$y = -4x + 5$$

$$x = 2y - 1$$

83. Find the x -intercept, the y -intercept, and the rate of change.

$$y = -5(x - 2) + 3$$

84. Make a table and graph for the following symbolic rule.

$$y = -\frac{1}{2}(x - 5) - 2$$

85. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line perpendicular to the line $y = -4x$ and has an x -intercept of 8.

86. Use DPOM to convert x -intercept form into slope-intercept form.

$$y = \frac{3}{10}\left(x - \frac{19}{15}\right)$$

87. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

Find the value of 2 numbers if their sum is 12 and their difference is 4.

88. Set up a proportion to help you solve the following problem.

Samuel has a collection of toy cars. His favorites are the 27 red ones, which make up 60% of his collection. How many toy cars does Samuel have?

89. Solve the inequality and graph the solution on a number line:

$$2y - 5 < 7$$

90. What is the volume of a cylinder that has a radius of the base of 1.4 feet and a height of 5 feet? Write your answers as exact and an estimate to the nearest hundredth.

91. Solve for the variable.

$$\frac{3}{2}z + \frac{1}{5}z = \frac{11}{6}z - \frac{2}{15}$$

92. Find the intersection point using substitution or elimination.

$$6a + 7b = 8$$

$$-6a - 2b = 12$$

93. Find the x -intercept, the y -intercept, and the rate of change.

$$9x + 4y = 32$$

94. Make a table and graph for the following symbolic rule.

$$y = -5x - 12$$

95. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line with a y -intercept of -2 and a rate of change of -6.

96. Factor y -intercept form in order to convert to x -intercept form.

$$y = -24x + \frac{6}{10}$$

97. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of \$75. The school took in \$67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of one senior citizen ticket and one child ticket?

98. Set up a proportion to help you solve the following problem.

A zoo has 15 Emperor penguins. The Emperor penguins make up 30% of the total number of penguins at the zoo. How many total penguins live at the zoo?

99. Solve the system of inequalities and graph the solution.

$$y + 1 > x$$

$$y - 3 \leq x$$

100. What is the volume of a cylinder that has a diameter of the base of 9 cm and a height of 24 cm? Write your answers as exact and an estimate to the nearest hundredth.

101. Solve for the variable.

$$\frac{2}{5}c - \frac{1}{5} = \frac{2}{3}$$

102. Find the intersection point using substitution or elimination.

$$d = e + 8$$

$$d = -3e + 10$$

103. Find the x -intercept, the y -intercept, and the rate of change.

$$y = 2(x + 4) - 7$$

104. Make a table and graph for the following symbolic rule.

$$y = 3(x - 9)$$

105. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line parallel to the line $y = 7x + 2$ that goes through the origin.

106. Use DPOM to convert coordinate form into y -intercept form.

$$y = -\frac{5}{16}(x + 4) - \frac{1}{3}$$

107. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

An exam worth 145 points contains 50 questions. Some of the questions are worth two points and some are worth five points. How many two point questions are on the test?
How many five point questions are on the test?

108. Set up a proportion to help you solve the following problem.

Renata now earns \$9.50 per hour. This is 125% of what she earned last year. What did she earn per hour last year?

109. Solve the inequality and graph the solution on a number line:

$$6 \geq 2(x - 4)$$

110. What is the surface area of a cylinder that has a radius of the base of 25 mm and a height of 52 mm? Write your answers as exact and an estimate to the nearest hundredth.

111. Solve for the variable.
 $72 = 5(12 - f)$
112. Find the intersection point using substitution or elimination.
 $g + 2h = 4$
 $2g - h = 8$
113. Find the x -intercept, the y -intercept, and the rate of change.
 $y = -9x + 5$
114. Make a table and graph for the following symbolic rule.
 $y = \frac{1}{3}(x - 9)$
115. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line perpendicular to the line $y = 7x + 2$ that goes through the point $(2, 4)$.
116. Factor slope-intercept form in order to convert to x -intercept form.
 $y = -\frac{7}{6}x + \frac{71}{6}$
117. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then, use either substitution or elimination to solve!
The Lakers scored a total of 80 points in a basketball game against the Bulls. The Lakers made a total of 37 two-point and three-point baskets. How many two-point shots did the Lakers make? How many three-point shots did the Lakers make?
118. Set up a proportion to help you solve the following problem.
The Incredible Chocolate Chip Company has discovered that 36 out of 400 chocolate chip cookies do not contain enough chocolate chips. What percent of the chocolate chip cookies do not have enough chips?
119. Solve the system of inequalities and graph the solution.
 $2y \leq 4x - 4$
 $3x + y > 6$
120. What is the surface area of a cylinder that has a diameter of the base of 12 inches and a height of 7 inches? Write your answers as exact and an estimate to the nearest hundredth.

121. Solve for the variable.

$$4(3-i) = \frac{1}{2}(4i-3)$$

122. Find the intersection point using substitution or elimination.

$$3j + k = 1$$

$$3j + k = 5$$

123. Find the x -intercept, the y -intercept, and the rate of change.

$$-8x + 14y = 56$$

124. Make a table and graph for the following symbolic rule.

$$y = -\frac{3}{4}x + 10$$

125. Write 4 symbolic rules in different forms (slope-intercept, x -intercept, point-slope, standard) for a line with a rate of change of -8 that goes through the point $(-2, -5)$.

126. Use DPOM to convert point-slope form into slope-intercept form.

$$y = -\frac{2}{3}(x-12) - 52$$

127. Write a system of equations, being sure to say what your variables represent, to represent the situation. Then use either substitution or elimination to solve.

You and a friend go to Taco Bell for lunch. You order three soft-shell tacos and three burritos for a total cost of \$11.25. Your friend's bill is \$10.00 for four soft-shell tacos and two burritos. How much does a soft-shell taco cost? How much does a burrito cost?

128. Set up a proportion to help you solve the following problem.

The sale price of a phone was \$150, which was only 80% of the normal price. What was the normal price of the phone?

129. Solve the inequality and graph the solution on a number line:

$$3x + 1 > 4x - 2$$

130. What is the radius of a cylinder that has a volume of $10\pi \text{ m}^3$ and a height of 2.5 m?

Answers

- | | |
|---|--|
| <p>1. $a = 18$
 2. $(-9, -17)$
 3. $roc = -5$
 x-intercept $\left(\frac{13}{5}, 0\right)$
 y-intercept $(0, 13)$
 4. make table and graph
 5. $y = 4x + 12$
 $y = 4(x + 3)$
 $y = 4(x - 1) + 16$ can vary
 $4x - y = -12$
 6. $y = 6x + 37$
 7. 67 bicycles, 18 tricycles
 8. 25 girls
 9. $x \leq -4$ and number line
 10. Exact: 4π cm
 Rounded: 12.57 cm
 $b = -\frac{80}{9}$
 11. $(4, 5)$
 12. $roc = -\frac{1}{3}$
 13. x-intercept $(2, 0)$
 y-intercept $\left(0, \frac{2}{3}\right)$
 14. make table and graph
 15. $y = -2x + 6$
 $y = -2(x - 3)$
 $y = -2(x - 1) + 4$ can vary
 $2x + y = 6$
 $y = -19\left(x - \frac{12}{19}\right)$
 16.
 17. 21 large bows, 15 small
 18. 40 cm
 19. Graph
 20. Exact: 7.5π in
 Rounded: 23.56 in
 21. $e = -5$
 22. $(-1, 8)$</p> | <p>23. $roc = 2$
 x-intercept $\left(-\frac{1}{2}, 0\right)$
 y-intercept $(0, 1)$
 24. make table and graph
 25. $y = 5x - 22$
 $y = 5\left(x - \frac{22}{5}\right)$
 $y = 5(x - 4) - 2$ can vary
 $5x - y = 22$
 $y = \frac{4}{9}x + \frac{9}{2}$
 26.
 27. 6 Blu-Rays, 7 DVD's
 28. 48 problems
 29. $x < -7$ or $x > 7$ and number line
 30. Exact: 49π m²
 Rounded: 153.94 m²
 $h = \frac{97}{48}$
 31.
 32. No solution
 $roc = \frac{4}{3}$
 33. x-intercept $\left(\frac{15}{4}, 0\right)$
 y-intercept $(0, -5)$
 34. make table and graph
 35. $y = -2x + 6$
 $y = -2(x - 3)$
 $y = -2(x + 1) + 8$ can vary
 $2x + y = 6$
 $y = -2\left(x - \frac{1}{12}\right)$
 36.
 37. 22 dimes, 9 nickels
 38. 456 miles
 39. Graph
 40. Exact: 30.25π mm² or $\frac{121}{4}\pi$ mm²
 Rounded: 95.03 mm²
 41. $k = 10$
 $\left(3, \frac{1}{2}\right)$
 42.</p> |
|---|--|

43. $roc = -\frac{1}{2}$
 x-intercept (1,0)
 y-intercept $\left(0, \frac{1}{2}\right)$
44. make table and graph
45. $y = 2x + 0$
 $y = 2(x - 0)$
 $y = 2(x - 1) + 2$ can vary
 $2x - y = 0$
 $y = -\frac{7}{9}x - \frac{3}{2}$
46. 23 cows, 17 chickens
47. 108 rooms
48. $d \leq 3$ and number line
49. **Area:** Exact: 64π yd²
 Rounded: 201.06 yd²
Perimeter: Exact: $8\pi + 32$ yd
 Rounded: 41.13 yd
50. $n = \frac{1}{5}$
 $\left(3, \frac{1}{10}\right)$
51. $roc = 1$
 x-intercept $(-4, 0)$
 y-intercept $(0, 4)$
52. make table and graph
53. $y = \frac{4}{3}x + 4$
 $y = \frac{4}{3}(x + 3)$
 $y = \frac{4}{3}(x - 3) + 8$ can vary
 $4x - 3y = -12$
 $y = \frac{11}{3}(x + 9)$
54. father is 41, son is 18
55. 975 words
56. Graph

60. **Area:** Exact: 18π ft²
 Rounded: 56.55 ft²
Perimeter: Exact: $12\pi + 12$ ft
 Rounded: 49.70 ft
61. $q = -12$
 $(2, 0)$
62. $roc = 1.5$ or $\frac{3}{2}$
 x-intercept $(-2, 0)$
 y-intercept $(0, 3)$
63. make table and graph
 $y = 2x + 1$
64. $y = 2\left(x + \frac{1}{2}\right)$
 $y = 2(x - 1) + 3$ can vary
 $2x - y = -1$
 $y = -5x + 13$
65. Mami has \$11, Jami has \$21
66. 26%
67. no solution
68. **Area:** Exact: 4.32π m²
 Rounded: 13.57 m²
Perimeter: Exact: $3.6\pi + 4.8$ m
 Rounded: 16.11 m
69. $t = -\frac{17}{3}$
 $(4, -1)$
70. $roc = -\frac{1}{2}$
 x-intercept $(-5, 0)$
 y-intercept $\left(0, -\frac{5}{2}\right)$
71. make table and graph
 $y = -\frac{1}{2}x + 3$
72. $y = -\frac{1}{2}(x - 6)$
 $y = -\frac{1}{2}(x - 1) + \frac{5}{2}$ can vary
 $x + 2y = 6$
 $y = 12(x - 4)$
73. hats are \$1.50, streamers are \$2.50
74. 96 students

79. $y \leq 2x - 3$ and graph
80. Exact: $54\pi \text{ in}^3$, Rounded: 169.65 in^3
81. $w = -3$
82. $(1,1)$
83. $roc = -5$
 x-intercept $\left(\frac{13}{5}, 0\right)$
 y-intercept $(0,13)$
84. make table and graph
 $y = \frac{1}{4}x - 2$
85. $y = \frac{1}{4}(x - 8)$
 $y = \frac{1}{4}(x - 1) - \frac{7}{4}$ can vary
 $x - 4y = 8$
 $y = \frac{3}{10}x - \frac{19}{50}$
86. numbers are 8 and 4
87. 45 toy cars
88. $y < 6$ and number line
90. Exact: $9.8\pi \text{ ft}^3$
 Rounded: 30.79 ft^3
91. $z = 1$
 $\left(-\frac{10}{3}, 4\right)$
92. $roc = -\frac{9}{4}$
93. x-intercept $\left(\frac{32}{9}, 0\right)$
 y-intercept $(0,8)$
94. make table and graph
95. $y = -6x - 2$
 $y = -6\left(x + \frac{1}{3}\right)$
 $y = -6(x - 1) - 8$ can vary
 $6x + y = -2$
 $y = -24\left(x - \frac{1}{40}\right)$
96. child is \$7, senior citizen is \$4
98. 50 penguins

99. $y > x - 1$ and graph
 $y \leq x + 3$
100. Exact: $486\pi \text{ cm}^3$
 Rounded: 1526.81 cm^3
 $c = \frac{13}{6}$
101. $\left(\frac{17}{2}, \frac{1}{2}\right)$
102. $roc = 2$
103. x-intercept $\left(-\frac{1}{2}, 0\right)$
 y-intercept $(0,1)$
104. make table and graph
105. $y = 7x + 0$
 $y = 7(x - 0)$
 $y = 7(x - 1) + 7$ can vary
 $7x - y = 0$
 $y = -\frac{5}{16}x - \frac{19}{12}$
106. 35 2-pointers, 15 5-pointers
108. \$7.60
109. $x \leq 7$ and number line
110. Exact: $3850\pi \text{ mm}^2$
 Rounded: 12095.13 mm^2
 $f = -\frac{12}{5}$
111. $(4,0)$
112. $roc = -9$
113. x-intercept $\left(\frac{5}{9}, 0\right)$
 y-intercept $(0,5)$
114. make table and graph
 $y = -\frac{1}{7}x + \frac{30}{7}$
115. $y = -\frac{1}{7}(x - 30)$
 $y = -\frac{1}{7}(x - 2) + 4$ can vary
 $x + 7y = 30$
 $y = -\frac{7}{6}\left(x - \frac{71}{7}\right)$
- 116.

117. 31 2-point baskets, 6 3-point baskets
118. 9%
119. $y \leq 2x - 2$ and graph
 $y > -3x + 6$
120. Exact: $156\pi \text{ in}^2$
Rounded: 490.09 in^2
 $i = \frac{9}{4}$
121. $i = \frac{9}{4}$
122. No solution.
 $roc = \frac{4}{7}$
123. x-intercept $(-7, 0)$
y-intercept $(0, 4)$
124. make table and graph
125. $y = -8x - 21$
 $y = -8\left(x + \frac{21}{8}\right)$
 $y = -8(x + 2) - 5$ can vary
 $8x + y = -21$
 $y = -\frac{2}{3}x - 44$
- 126.
127. tacos are \$1.25, burritos are \$2.50
128. \$187.50
129. $x < 3$ and number line
130. 2 m