

Grade 6 Summer Review Packet

DUE THE FIRST DAY OF SCHOOL

The problems in this packet are designed to help you review topics from previous mathematics courses that are essential to your success in Integrated Math I. **You are expected to bring this completed packet to class on the first day of school.** In addition, this packet will count as part of your first quarter grade. **Upon returning, you will be ASSESSED on the content of this packet.** All contents outlined in the packet are Integrated Math I objectives. Neatly **SHOW YOUR WORK** on a separate sheet of paper.

1. The ages, in years, of a group of friends are listed.
29, 33, 35, 49, 50, 51, 52, 29
- Find the mean, median, mode, and range.
 - Which measure of central tendency best represents the data? Explain.

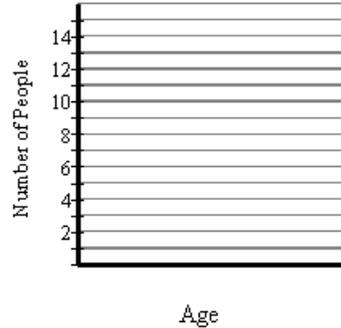
2. Use the data below. It shows the number of hits made by 30 leading hitters in a Middle School Softball League.
108, 60, 76, 74, 116, 88, 68, 74, 108, 76, 78, 93, 116,
108, 96, 68, 88, 108, 60, 74, 68, 88, 78, 76, 108, 116, 84,
106, 96, 93
- Make a frequency table and histogram of the data.
 - Make a conclusion from the data.

3.
Retirement Ages of Police Detectives

Age	Tally	Frequency
50-52		2
53-55		3
56-58		4
59-61		4
62-64		8
65-67		9

Make a histogram of the data.

4. The table shows the number of people in each age group at a sports camp. Make a histogram of the data.
- | Age Group | Number of People |
|-----------|------------------|
| 9-11 | 3 |
| 12-14 | 8 |
| 15-17 | 6 |
| 18-20 | 3 |



5. **SHORT RESPONSE** Write your answer on a separate piece of paper.

Roosevelt School Drama Club

Diane	Teresa	Michelle
Ryan	David	Victor
Kyra	Benjamin	Camille
Brian	Nathan	Julie

Organize the data in a list from **shortest** to **longest** name. Create a table of the data. Which name length is the **least** common? Explain your answer.

Write the fraction in simplest form.

6. $\frac{40}{48}$

Write the fractions in simplest form. Tell whether they are equivalent.

7. $\frac{126}{273}, \frac{48}{112}$

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

$$8. \frac{5}{29} \quad ? \quad \frac{4}{17}$$

Write the fraction or mixed number as a decimal. Then tell whether the decimal is a *terminating decimal* or *repeating decimal*.

$$9. 3 \frac{3}{20}$$

10. SHORT RESPONSE Write your answer on a separate piece of paper.

Part A Draw a model of the fraction $\frac{6}{25}$.

Part B Draw a model of the decimal 0.24. What do you notice about the two numbers? Explain how the models show this relationship.

Find the sum or difference.

$$11. 4 \frac{2}{3} + 9 \frac{3}{4}$$

$$12. 5 \frac{1}{3} - 4 \frac{6}{7}$$

Evaluate the expression when $x = 4$ and $y = 5$.

$$13. \frac{2}{5}x$$

Estimate the product by rounding each factor to the nearest whole number.

$$14. \frac{8}{9} \times 2 \frac{2}{7}$$

15. Explain how to find the quotient. Then find the quotient.

$$\frac{1}{11} \div \frac{3}{7}$$

Write the verbal phrase as a variable expression. Let x represent the number.

16. The product of -8 and a number

Write an equation to represent the situation described. Solve the equation.

17. Miguel has read 43 fewer pages than Ramon. Miguel has read 566 pages. How many pages has Ramon read?

18. Translate the verbal phrase into an algebraic expression: The quotient of 4 times a number and 12.

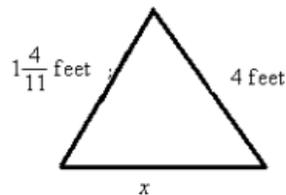
19. What is the phrase "5 times the sum of a number and 6" written as a variable expression?

20. The low temperature for the day is -3°F . The temperature rises to a high of 11°F .

- Write an equation to describe the situation.
- What is the difference between the low and high temperature for the day?

21. The low temperature at 6:00 A.M. is -3°F . During the day the temperature rises to a high of 11°F . Write and solve an equation to find the change in temperature.

22. Write an equation relating the perimeter and the lengths of the sides of the triangle. Then solve for x . The figure is not drawn to scale.
perimeter = 8 feet



Solve the equation. Check your solution.

$$23. \frac{m}{9} = 6$$

Solve the equation. Round the solution to the nearest hundredth if necessary.

$$24. 5 = 8k - 4k$$

25. At the Last Chance Filling Station, gas costs \$1.98 a gallon. Mitchell paid \$17.82 to fill his tank. Write and solve an equation to find the number of gallons Mitchell bought.

Solve the equation. Check your solution.

26. $-6x + 9 = -21$

Write the ratio as a fraction in simplest form.

27. $48 : 60$

Find a value for x that makes the first ratio equivalent to the second ratio.

28. x to 54, 5 to 9

Find the unit rate.

29. $\frac{18 \text{ ft}}{3 \text{ h}}$

30. 40 note cards in 5 boxes

31. Tom is buying a package of pens at a store. The store sells packages of 8 pens for \$1.28 and 14 pens for \$1.54. Which package offers the better unit price?

Write the percent as a fraction in simplest form.

32. 85%

Write the fraction as a percent.

33. $\frac{1}{25}$

Write the percent as a decimal.

34. 86%

Write the fraction as a percent. Round to the nearest tenth of a percent if necessary.

35. $\frac{15}{28}$

Find the angle measure that corresponds to the percent of a circle.

36. 20%

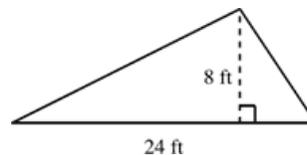
37. A greeting card store keeps track of the types of cards it sells. The percentages are birthday, 25%; anniversary, 15%; graduation, 10%; special occasions, 30%; other, 20%. Make a circle graph of the data.

True or False:

38. To create a circle graph, you often need to convert percentages to degrees.

Find the area of the triangle.

39.

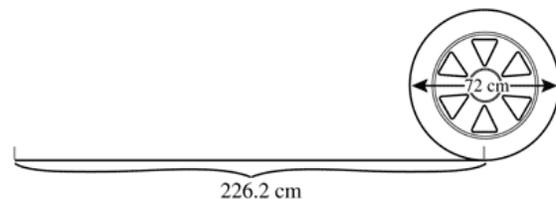


Find the unknown base or height of the trapezoid.

40. $A = 148.5 \text{ yd}^2$, $b_1 = 11 \text{ yd}$, $b_2 = 16 \text{ yd}$, $h = \underline{\quad}$

41. A piece of fabric measures 39 inches by 42 inches. A triangular scarf with a height of 21 inches and a base of 22 inches is cut from the fabric. How much is left over?

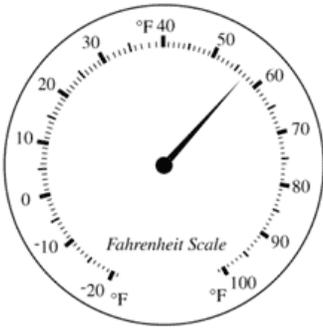
42. Aaron measured the circumference of a tire by making a mark on the tire, marking the ground the first time the mark touched the ground, and rolling the tire until the same tire mark touched the ground again. He then measured the distance the tire had rolled.



What number expresses the ratio between the circumference of the tire and the diameter of the tire?

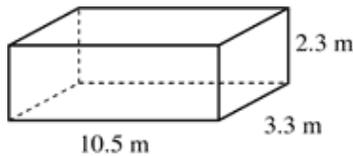
Find the area of the circle. Use 3.14 for π .

43. $r = 35$ mm

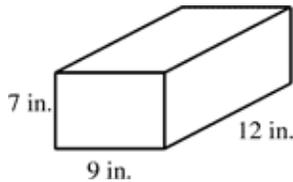


Find the surface area of the rectangular prism.

44.



45. Tom works for Perfect Packages gift wrap service. When using expensive wrapping paper, the company charges customers by the square inch. Tom is going to wrap the box below, so he needs to find the surface area.



Make a diagram which correctly shows how the box would look unfolded and use the drawing to find the total surface area of the box.

Find the unknown length, width, or height of the rectangular prism.

46. $V = 384$ cm³, $l = 12$ cm, $w = \underline{\quad}$, $h = 8$ cm

Find the unknown radius, diameter, or height of the cylinder. Use 3.14 for π .

47. $V = 301.44$ ft³
 $r = 8$ ft

$h = \underline{\quad}$

Find the sum or difference. Then simplify, if possible.

48. $\frac{11}{13} + \frac{5}{13}$

49. $\frac{2}{3} + \left(-\frac{1}{6}\right)$

50. $\frac{17}{19} + \frac{15}{19}$

51. $-3\frac{3}{4} + \left(-2\frac{1}{3}\right)$

Use the following information. You have three days to complete a 30-mile hike through Mount Rushmore National Park. You hike $8\frac{2}{3}$ miles the first day, and $11\frac{3}{5}$ miles the second day. How many miles will you have to hike the third day to finish the trip?

52. Substitute the given values into the model.

53. Solve the equation to find the miles left to hike.

Find the product or quotient.

54. $\frac{3}{7} \cdot \left(-\frac{2}{9}\right)$

55. $-4 \cdot \left(-\frac{11}{15}\right)$

56. $-2\frac{4}{5} \div 8$

57. $-\frac{7}{12} \div 21$

58. $\left(-1\frac{1}{8}\right) \cdot 4\frac{2}{3}$

Write the fraction or mixed number as a decimal.

59. $3\frac{1}{4}$

60. $7\frac{5}{16}$

Solve the equation.

61. $x + 3.5 = 7.3$

62. $x + (-7.21) = 4.6$

63. $5.8 + y = 2.7$

Evaluate the expression when $a = -\frac{5}{6}$ and $b = 2\frac{2}{7}$.

64. $-6a$

Find the sum, difference, product or quotient.

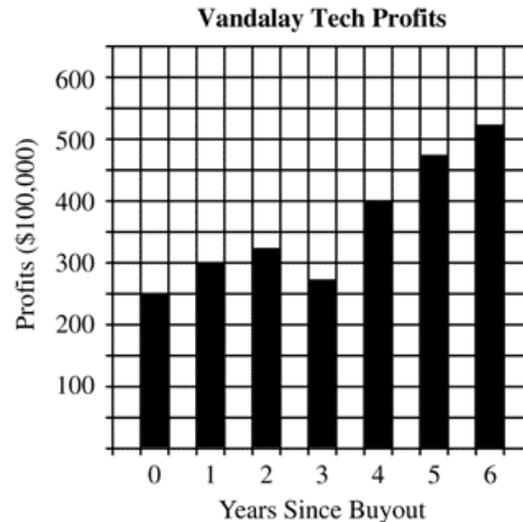
65. $-7.971 + (-8.12)$

Simplify the variables expression.

66. $-\frac{4p}{15q} - \frac{7p}{15q}$

67. An outdoor hot tub needs $\frac{3}{4}$ ounce of algaecide every day to kill algae growth. You buy a 30 ounce bottle of algaecide. How many days of use will you get from the bottle?

68. Seven years ago, Vandalay Tech borrowed money and bought a competing company. At the time, critics said that borrowing the money for the buyout would have a negative impact on Vandalay's profit, and might even cause it to go bankrupt. The graph below shows the net profits declared by Vandalay since the buyout of its competitor.



How do the profits in year 6 compare to the profits in year 0 (the year of the buyout)? Did the buy-out have a negative impact on Vandalay's profit? Explain.

Write the phrase as an expression. Let x represent the number.

69. 12 less than a number

70. To rent an apartment you must pay a \$600 dollar deposit and your monthly rent is \$500. Write a variable expression for the cost of renting for m months. Then find the cost for 12 months.

71. Ms. Sanders bought d dollars worth of stock. During the first year, the value of the stock tripled. The next year, the value of the stock decreased by \$600. Write an expression that can be used to represent the value of her stock at the end of the second year.

Find a solution of the equation using the Guess, Check, and Revise method.

72. $5x = 3x + 24$

73. $3x + 4 = 6x - 14$

74. Kyle and his brother bought a bag of marbles and split it equally. Kyle gave half of his marbles to a friend and then 14 marbles to his sister. If Kyle has 17 marbles left, how many pieces of marbles were in the bag that Kyle and his brother bought?

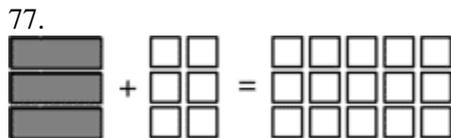
Solve the equation.

75. $j + 7 = 39$

Solve the equation. Check your answer.

76. $\frac{w}{7} - 4 = 9$

Use variables and symbols to write the equation modeled with the algebra tiles. Solve the equation.



Information is missing. Tell what information is needed in order to solve the problem.

78. Jarod is buying plastic cups and punch for a party. He buys 5 gallons of punch and 60 cups. If he spent \$18, how much did each plastic cup cost?

Solve the equation.

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

Simplify the expression.

80. $\frac{3h}{8k} + \frac{h}{8k}$

81. Mail-il has $7\frac{3}{7}$ yards of material. Her new skirt will take $2\frac{4}{7}$ yards. How much material (in yards) will she have left after the skirt is made?

Simplify the expression.

82. $\frac{5}{9k} + \frac{7}{18k}$

Solve the equation.

83. $6\frac{1}{4} - 3\frac{4}{7} - g = 1\frac{5}{6}$

Evaluate the expression for the given value of the variable.

84. $\frac{10}{s}$ when $s = 2$

Find the product. Simplify if possible.

85. $-\frac{2}{8} \cdot \left(-\frac{2}{4}\right)$

Evaluate the expression when $a = 5$ and $b = 8$.

86. $\frac{3a}{b} \div \frac{7}{12}$

Find the quotient. Simplify if possible.

87. $4\frac{2}{8} \div \left(-3\frac{1}{3}\right)$

Find the sum or difference.

88. $2.110 - (-4.363)$

Solve the equation.

89. $-32.56 + x = -94.5$

90. $-11.27 = x - 8.37$

Convert the temperature in degrees Celsius to kelvins or the temperature in kelvins to degrees Celsius. Use the formula $K = C + 273.15$.

91. 350.30 K

Solve the equation.

92. $-2.4x = -0.834$

93. The price of a dozen roses usually increases around Valentine's Day. The chart below shows the price of a dozen roses at one florist's shop in various months of the year.

Month	Price of dozen roses
February	\$44.50
April	\$34.00
June	\$23.75
August	\$27.50
October	\$31.50
December	\$39.75

What is the mean price of roses for the 6 months listed?

94. At 6:44 p.m., a parachutist is 5400 feet above the ground. At 6:52 p.m., the parachutist is 1900 feet above the ground. Find the average rate of change in feet per minute.

Write the decimal or fraction as a percent.

95. 7.8

Write the percent as a decimal and as a fraction.

96. 12%

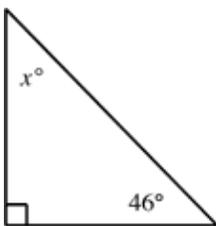
97. At the end of the summer, lawn furniture that sold for \$332 is on sale for 20% off. What is the amount of discount?

Find the sum, difference, product, or quotient.

98. $35.3 - 42.76$

Find the value of x . Classify the triangle by its angles.

99.



Can the angles in a triangle have the measures given? Explain.

100. $158.2^\circ, 18.6^\circ, 4.2^\circ$

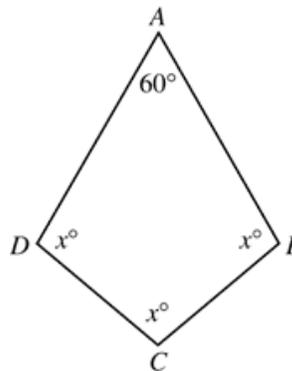
Find the value of x .

101.



102. **GRIDDED RESPONSE** Grid the correct answer on a separate gridding sheet.

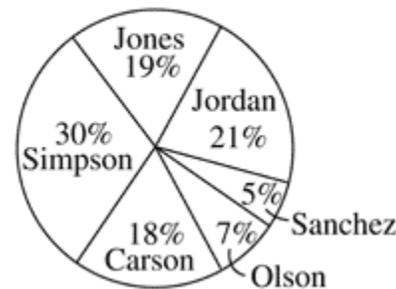
Consider the quadrilateral below.



What is the value of x in the quadrilateral? (The figure may not be drawn to scale.)

The following circle graph shows the results from the elections for city council among six different candidates.

ELECTION RESULTS



103. Who won the election?
 Jones Jordan Simpson Simpson

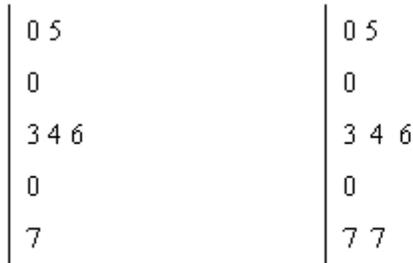
104. What percent of the people did *not* vote for Jones?
 % % % %

105. Find the percent of a circle that corresponds to 135° .

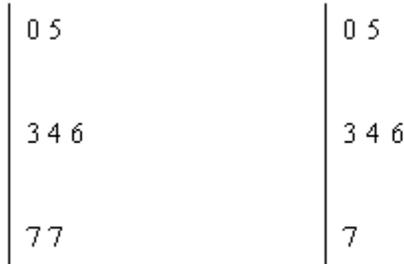
- 10% 1% 75% 5%

106. Use the data to make a stem-and-leaf plot.

32.6, 34.7, 30.5, 32.4, 34.7, 32.3, 30.0



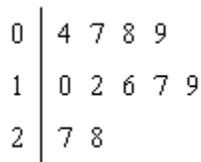
Key: 30 | 5 = 30.5 Key: 30 | 5 = 30.5



Key: 30 | 5 = 30.5 Key: 30 | 5 = 30.5

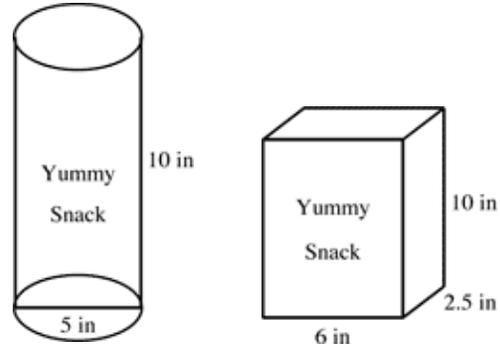
107. The stem-and-leaf plot below shows the number of calendars students sold to raise money for the school band. How many students sold more than 7 calendars?

Number of Calendars Sold



Key: 0 | 4 = 4

108. The Yummy Cracker Company uses two types of containers for its crackers. (Figures may not be drawn to scale.)

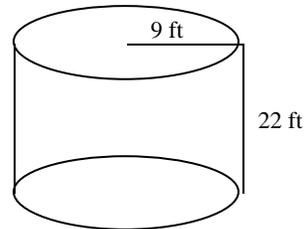


What is the volume of the container that will hold more crackers when full? Use 3.14 as an approximation for π .

- 1.25 in.³ 1 in.³ 5 in.³ 1 in.³

Find the volume of the cylinder. Round to the nearest unit.

109.



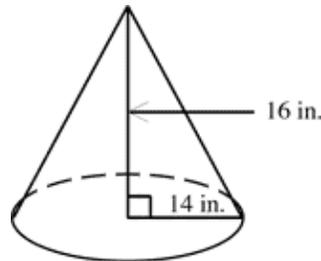
- 73 ft³ 93 ft³ 95 ft³ 36 ft³

110. One section of a brick wall that needs to be built is 12 feet long. The brick wall will be 4 feet tall and 1 foot thick. Each brick is 9 inches long by 6 inches wide by 3 inches thick. What is the total volume for this section of the wall?

- 1 ft³ 12 ft³ 48 ft³ 12 ft³

Find the volume of the cone. Round to the nearest tenth.

111.



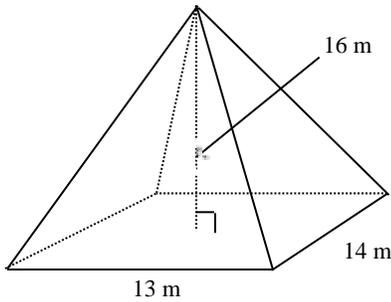
- 259.5 in.³ .6 in.³ 16.2 in.³ 4.0 in.³

112. A bottle is made up of a cone and a cylinder. The cone fits on top of the cylinder, and both have the same radius of 4.9 inches. If the total height of the bottle is 14 inches, and the height of the cylinder is 8 inches, find the volume of the bottle rounded to the nearest cubic inch. Use 3.14 as an approximation for π .

1. in.³ 5 in.³
 1. in.³ 1 in.³

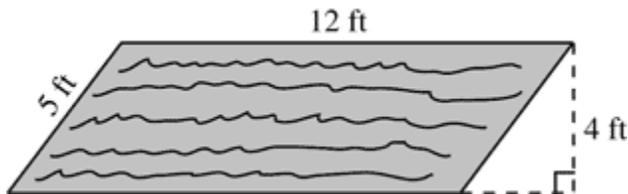
Find the volume of the pyramid.

113.



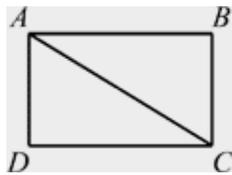
114. **GRIDDED RESPONSE** Grid the correct answer.

Jonas wants to put a layer of bark chips on his garden, which is shaped like a parallelogram, as shown below.



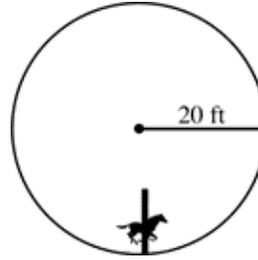
How many square feet of bark chips does Jonas need to cover his garden?

115. In the drawing below, $ABCD$ is a rectangle with a diagonal line drawn from A to C .



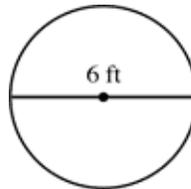
If the area of $\triangle ACD$ is 12.5 square centimeters, what is the area of $ABCD$ in square centimeters?

116. How far does the horse on the edge of the merry-go-round travel in one revolution? The radius of the merry-go-round is 20 feet. Use 3.14 as an approximation for π .



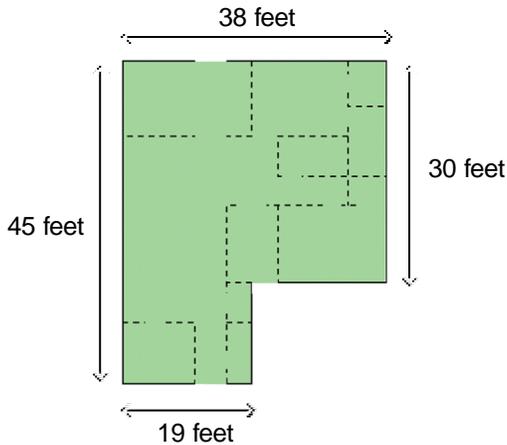
- 3 ft 4 ft
 6 ft 16 ft

117. A theater production calls for a prop made of a circular piece of fabric with a diameter of 6 feet. How much fabric is needed for the prop? Use 3.14 for π .



118. Blake drew a floor plan for a house. He wrote in the dimensions of the house in feet. Now Blake wants to calculate the area or square footage of the house. He knows he has to multiply length \times width to determine the area.

Area of a rectangle = length \times width

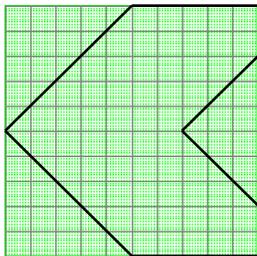


What is the area of the house, in square feet?

119. A fifth grade class was studying geometric shapes in an art class. In one assignment, students were asked to draw a design for a house. The house had to have 8 sides. This is the design that Mark drew.

Area of a rectangle = length \times width

Area of a triangle = (base \times height) \div 2



= 1 square yard

Part A What is the area of Mark's house in square yards?

Part B How many lines of symmetry does Mark's house have?

Write the rate as a unit rate.

120. Write the rate as a unit rate.

$$\frac{\$462.50}{10 \text{ nights}}$$