June 16, 2020

Good Shepherd School
620 Isham Street
New York, NY 10034
212-567-5800

Grade 6 going into grade 7

INCOMING
7TH GRADE
SUMMER MATH PACKET
GOOD SHEPHERD SCHOOL
DUE DATE: 09/14/20

Some education researchers*estimate that students lose the equivalence of one month of learning over the summer. Mathematics, specifically computation, is an area greatly impacted by the summer break.

On average all students lose approximately 2.6 months of grade level equivalency. I am asking for your help in battling this trend, so our kids continue to raise their scores.

Ms. Velez

* John Hopkins University, Center for Summer Learning (2004)

Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Summer Math Skills for 6th Grade going into 7th Grade-2019 (Must Show All Work and Attach Scrap paper for Full Credit)

Order the numbers from least to greatest.

1. 4.3, 3.4, 4.5, 3.45

2. 0.71, 0.75, 0.7, 0.715

Perform the indicated operation.

3. $4.2 + 1.9$

4. $18.24 + 22.09$

5. $8.6 - 3.45$

6. $8.21 - 5.19$

7. 9.3×0.6

8. 15.2×7.1

9. $1.5 \div 0.3$

10. $18.25 \div 7.3$

Write the mixed number as an improper fraction.

11. $5\frac{3}{4}$

12. $6\frac{4}{13}$

Write the improper fraction as a mixed number.

13. $\frac{23}{6}$

14. $\frac{27}{11}$

Find the product.

15. $8 \times \frac{3}{4}$

16. $\frac{5}{6} \times 30$

17. $4 \times \frac{7}{9}$

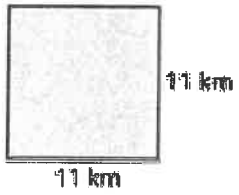
18. $\frac{4}{7} \times 9$

Copy and complete the statement.

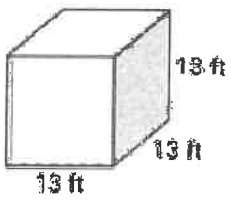
19. 9 ft = ? yd

20. 560 mm = ? cm

Find the area of the square.

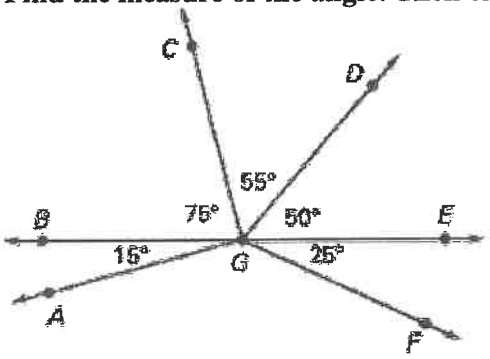
21. 

Find the volume of the cube.

22. 

Name: _____ ID: A

Find the measure of the angle. Then classify the angle as *acute*, *right*, *obtuse*, or *straight*.



23. $m\angle AGC$

24. $m\angle CGF$

25. $m\angle DGF$

26. $m\angle BGE$

____ 27. The perimeter of a square is 32 feet. Find the area of the square.
a. 64 ft^2
b. 65 ft^2
c. 9 ft^2
d. 8 ft^2

Evaluate the expression when $x = 20$ and $y = -3$.

28. $3x + 2y + 2x$

Use the distributive property and mental math to find the product.

____ 29. 7(6.1)
a. 427
b. 43.4
c. 4.27
d. 42.7

30. 4(51)

Use the distributive property to write an equivalent variable expression.

____ 31. $4(x + 3)$
a. $4x + 12$
b. $4x - 12$
c. $4x + 3$
d. $7x + 3$

32. $3(3-7x)$

____ 33. $-4(x-4)$

a. $-4x-4$
b. $-4x-16$
c. $-4x+4$
d. $-4x+16$

34. Your club of 27 students is touring an Old-West town. How much money will be spent if all the students in the club go on the train ride and visit the museum?

Admission Prices		
	Adult	Student
Museum	$9	$3
Train Ride	$7	$5

Perform the indicated operation.

____ 35. $547.54 + (-18.2)$

a. 565.74
b. 54,572
c. 529.34
d. 365.54

____ 36. $7.02 \div 0.009$

a. 0.7
b. 780
c. 7.8
d. 78

37. $-8(2.25)$

Solve the equation.

____ 38. $\frac{d}{9} = 4.3$

a. 38.7
b. 39.8
c. 37.6
d. 30.6

39. $1.87 = x + 11.04$

40. $3.87 + f = 16.86$

Copy and complete the statement using < or >.

41. $-2 \_?\_ -15$

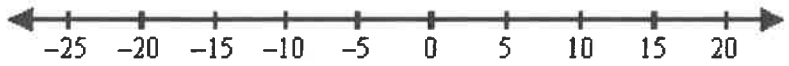
42. $25 \_?\_ -52$

Tell whether the statement is *true* or *false*. Explain your reasoning.

43. $-54 < -56$

44. January's monthly average temperature for six cities is given below. Use a number line to order the temperatures from least to greatest. Which city is normally the coldest in January?

City	City 1	City 2	City3	City 4	City 5	City 6
Temp	0°C	–25°C	–5°C	11°C	–10°C	20 °C



Order the integers from least to greatest.

45. $-265, 340, -180, 240, -325$

Complete the statement using <, >, or =.

____ 46. $|12| \_?\_ |-5|$

a. < b. > c. =

____ 47. Which of the following is a true statement?

a. $|-7| < |3|$ b. $|-7| > |3|$ c. $|-7| < |7|$ d. $0 > |-3|$

48. In the first four plays of a football game, 8 yards were lost, 5 yards were gained, 3 yards were gained, and 4 yards were gained.

a. What was the total number of yards lost or gained after the first four plays?
b. Did the team gain the necessary 10 yards for the first down?
c. If not, how many more yards would they have to have gained?

Find the difference.

49. $6 - (-8)$

50. $7 - (-18)$

51. $1 - (-14)$

52. $9 - (-6)$

53. $3 - (-12)$

54. $-14 - (-14)$

Find the product.

55. $-3(-92)$

56. $-8(3)(6)$

Solve the equation using mental math.

57. $6b = -42$

58. At noon the temperature was 14°C. If the temperature then dropped 4°C per hour, what was the temperature after 6 hours?

Find the quotient.

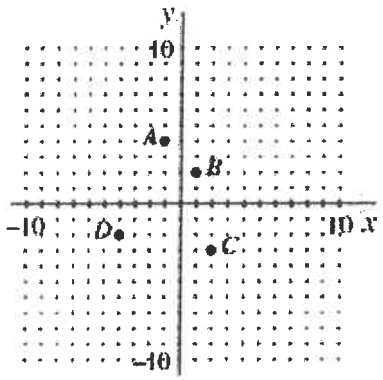
59. $-252 \div (-3)$

60. $-32 \div (4)$

Find the mean of the integers.

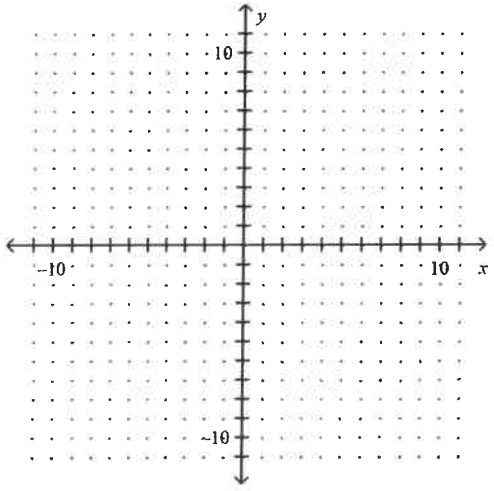
61. $-12, 7, -6, -15, 1$

62. Write the coordinates of the points A, B, C, and D.

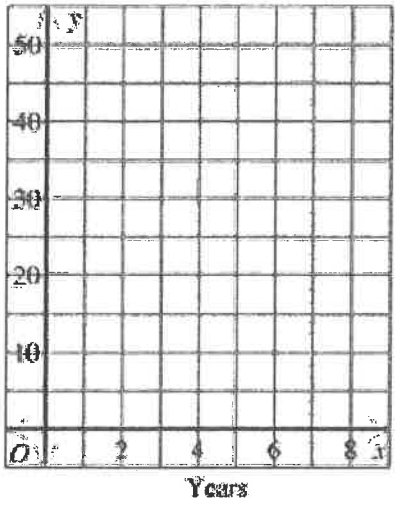


Plot and connect the points to form a rectangle. Then find the length, width, and area of the rectangle.

63. $A(8, -3)$, $B(8, 2)$, $C(4, 2)$, $D(4, -3)$



64. A company employee has recorded information on the size of the company over the last 8 years. The ordered pairs show the years in business and the number of employees. Make a scatter plot of the data. Then make a conclusion about the data.
$(1, 15), (2, 21), (3, 27), (4, 28), (5, 39), (6, 40), (7, 44), (8, 52)$



Evaluate the expression for the given value of the variable.

____ 65. $29 - x$ when $x = 9$
a. 19
b. 38
c. 20
d. 37

____ 66. $4a$ when $a = 2$
a. 16
b. 6
c. 8
d. 2

____ 67. $\frac{n}{4}$ when $n = 36$
a. 144
b. 36
c. 4
d. 9

68. $g - 1$ when $g = 18$

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

Evaluate the expression when $w = 8, x = 15, y = 4,$ and $z = 3$.

70. $\frac{x}{z}$

71. $w+y$

72. To find the mileage, or how many miles per gallon a car can travel, you can use the expression $\frac{m}{g}$, where m is the distance in miles and g is the number of gallons of gas used. Find the mileage for a car that travels 208 miles on 8 gallons of gas.

Evaluate the power.

____ 73. 1^4
a. 1 b. 8 c. 4 d. 2

74. 0^5

Copy and complete the statement using <, >, or =.

____ 75. 3^6 ? 6^3
a. > b. = c. <

____ 76. 100 ? 2^7
a. > b. < c. =

Evaluate the expression for the given value of the variable.

____ 77. a^3 when $a = 4$
a. 16 b. 12 c. 32 d. 64

Evaluate the expression when $x = 5$, $y = 30$, and $z = 6$.

____ 78. $\frac{x^3 - y}{x}$
a. 19 b. 119 c. 3 d. 9

79. $4y - z^2$

Evaluate the expression.

____ 80. $8(8 + 5) + 2$
a. 208 b. 120 c. 71 d. 106

____ 81. $2(22 - 8 + 2)$

a. 24 b. 42 c. 44 d. 32

____ 82. $\frac{46-11}{5}$

a. 5 b. 8 c. 6 d. 7

83. $27 \div 3 - 3$

84. $4 \div 2 \cdot 2 + 9 - 5$

85. $7(2 + 5) - 5$

86. $4^2 + 5(3 - 1)$

____ 87. What is the value of the expression $(3+2)^3$?

a. 9 b. 35 c. 15 d. 125

____ 88. Evaluate the expression $6 + (11 - 3)^2$.

a. 112 b. 8 c. 70 d. 118

____ 89. Evaluate the expression $74 + 4^2 \div 2$.

a. 45 b. 53 c. 106 d. 82

____ 90. What is 772,000 written in scientific notation?

a. 7.72×10^5

b. 772×10^3

c. 0.772×10^6

d. 77.2×10^4

Complete the statement using <, >, or =.

____ 91. 1.45×10^{15} ? 8.97×10^{14}

a. <

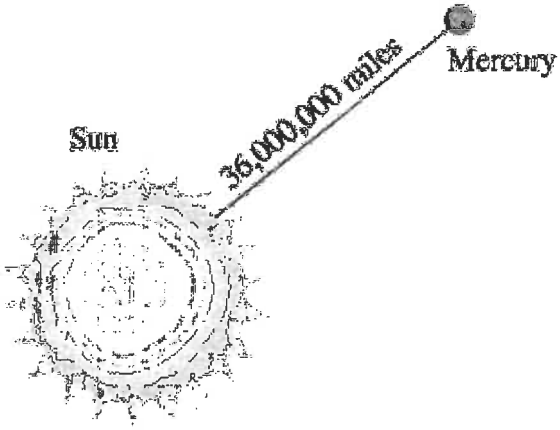
b. =

c. >

____ 92. Which of the following shows the numbers in order from **least** to **greatest**?

a. $7.6\times10^5, 7.6\times10^4, 6.7\times10^5$
b. $7.6\times10^4, 7.6\times10^5, 6.7\times10^5$
c. $6.7\times10^5, 7.6\times10^4, 7.6\times10^5$
d. $7.6\times10^4, 6.7\times10^5, 7.6\times10^5$

____ 93.



Which choice is equal to the distance from Mars to the Sun?

a. 3.6×10^7 miles
b. 3.6×10^6 miles
c. 36×10^8 miles
d. thirty-six hundred thousand miles

____ 94. What is 380,000 written in scientific notation?

a. 3.8×10^6
b. 3.8×10^5
c. 3.8×10^{-5}
d. 3.8×10^{-4}

95. What is 1.9×10^4 written in standard form?

Write the number in scientific notation.

96. 22,900

97. 358.5

Write the number in standard form.

98. 4.8302×10^6

99. 4.61×10^4

Order the numbers from least to greatest.

100. 4.13×10^8 4.7×10^7 4.63×10^7 5.82×10^6

101. 3.03×10^{10} 3.30×10^8 3.33×10^9 3.3×10^9 3.303×10^9

Find the value of x that makes the mean the given number. (Problem #104)

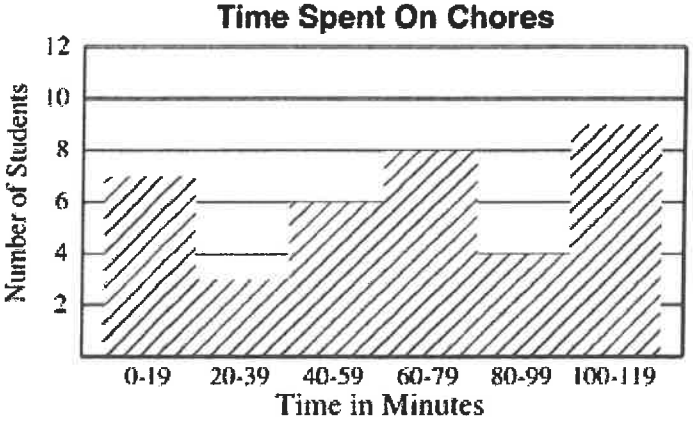
102. 34, 45, 32, 38, 47, x; mean = 37

103. Braxton had 8 bags of freshly ground wheat flour for the Farmer's Market. He weighed the bags and found their weights (in pounds) to be 6, 5, 5, 5, 8, 5, 10, and 4. Find the mean, median, mode and range of the weights.

Make an ordered stem-and-leaf plot of the data. (Problem #106)

104. Ages of committee members: 28, 47, 20, 36, 54, 39, 43, 52, 35, 51, 39, 53, 35, 54, 51

____ 105. The histogram shows the number of minutes students at Montrose Junior High typically spend on household chores each day. About how many students spend 20-39 minutes on chores?



a. 9 students
b. 4 students
c. 3 students
d. 8 students

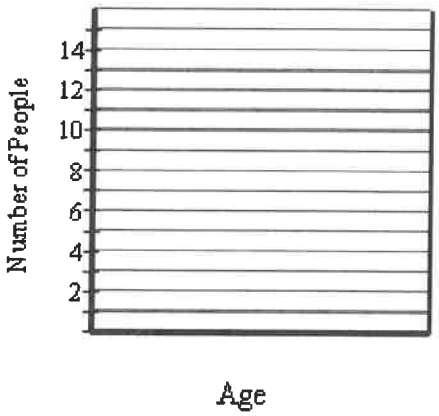
Copy and complete the frequency table using the data.

106. **Average minutes spent on daily homework:**
25, 35, 40, 15, 30, 85, 90, 100, 110, 15, 35, 64, 60

Interval	Tally	Frequency
?	?	?
?	?	?
61-90	?	?
91-120	?	?

107. 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



Write the prime factorization of the number.

____ 108. 170

a. $2^2 \times 5^2$
b. $2 \times 5 \times 17$
c. $2^2 \times 17$
d. $5^2 \times 17$

____ 109. 2835

a. $3^5 \times 5 \times 7$
b. $3^3 \times 5^2 \times 7$
c. $3^3 \times 5 \times 7$
d. $3^4 \times 5 \times 7$

110. 108

111. 1872

____ 112. Write the prime factorization of 300.
a. $2 \times 3 \times 5^2$
b. $2^2 \times 3^2 \times 5^2$
c. $2^2 \times 3 \times 5^2$
d. $2^2 \times 3 \times 5$

113. List all the factors of 36.

114. Make a factor tree for 230.

Find the greatest common factor of the numbers by listing factors.

____ 115. 48, 72
a. 108
b. 13
c. 2
d. 24

____ 116. 20, 24, 44
a. 4
b. 12
c. 8
d. 44

117. 30, 12

Find the greatest common factor of the numbers using prime factorization. Then tell whether the numbers are relatively prime.

____ 118. 30, 35
a. 1; relatively prime
b. 1; not relatively prime
c. 5; relatively prime
d. 5; not relatively prime

119. 95, 57

Find the GCF of the numbers using prime factorization.

120. 140, 440, and 260

____ 121. A teacher has 20 notebooks, 50 erasers, and 100 pencils. He wants to divide them so that each portion has an equal number of notebooks, an equal number of erasers, and an equal number of pencils. What is the maximum number of portions he can make?

a. 2
b. 5
c. 20
d. 10

122. Find the greatest common factor of the numbers by listing factors.

54, 72, 90

____ 123. Which three fractions in the group of four fractions below are equivalent?

$\frac{16}{20}, \frac{32}{40}, \frac{18}{20}, \frac{4}{5}$

a. $\frac{4}{5}, \frac{16}{20}, \frac{32}{40}$
b. $\frac{18}{20}, \frac{16}{20}, \frac{32}{40}$
c. $\frac{4}{5}, \frac{16}{20}, \frac{18}{20}$
d. $\frac{4}{5}, \frac{18}{20}, \frac{32}{40}$

124. Write three fractions equivalent to $\frac{4}{23}$.

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

125. $\frac{48}{84}, \frac{140}{245}$

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

Find the LCM using prime factorization.

127. 6, 15, 20

128. 12, 30

Find the GCF and the LCM of the numbers using prime factorization.

129. 25, 135

130. 15, 40

Write the mixed number as an improper fraction.

131. $8\frac{1}{13}$

Write the improper fraction as a mixed number.

____ 132. $\frac{27}{8}$

a. $3\frac{3}{8}$

b. $27\frac{1}{8}$

c. $1\frac{8}{19}$

d. $\frac{3}{8}$

133. $\frac{48}{7}$

Order the numbers from least to greatest.

134. $1\frac{1}{3}, \frac{13}{3}, \frac{79}{6}, 2\frac{3}{4}$

135. Jim measured his book as $7\frac{2}{5}$ inches long. Don measured it as $7\frac{7}{20}$ inches long. Which measurement is greater?

Write the fraction or mixed number as a decimal.

____ 136. $\frac{3}{8}$

a. 0.375
b. 2.66667
c. 0.83
d. 3.08

____ 137. $3\frac{5}{12}$

a. 3.45

b. $3.\overline{416}$

c. $3.4\overline{16}$

d. $3.41\overline{6}$

Rewrite the repeating decimal using bar notation.

____ 138. $0.024444\ldots$

a. $0.0\overline{242}$

b. $0.02\overline{4}$

c. $0.04\overline{2}$

d. $0.02\overline{24}$

Write the decimal as a fraction or mixed number.

____ 139. 3.45

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

b. $3\frac{69}{200}$

c. $3\frac{3}{5}$

d. $3\frac{9}{10}$

____ 140. 2.4

a. $2\frac{1}{25}$

b. $2\frac{2}{5}$

c. $\frac{2}{5}$

d. $2\frac{4}{5}$

____ 141. 0.015

a. $\frac{3}{2}$

b. $\frac{15}{10{,}000}$

c. $66\frac{2}{3}$

d. $\frac{3}{200}$

142. 0.59

____ 143. Which of the following is in order from least to greatest?

a. $52.69, 52.32, 52\frac{4}{5}, 53$

b. $53, 52\frac{4}{5}, 52.69, 52.32$

c. $52.32, 52.69, 52\frac{4}{5}, 53$

d. $52.32, 52.69, 53, 52\frac{4}{5}$

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

144. $\frac{23}{33}$

145. $3\frac{3}{20}$

Order the numbers from least to greatest.

146. $6\frac{7}{11}, 6.63\overline{7}, 6\frac{5}{8}, 6.63, \frac{55}{8}$

Find the sum or difference.

____ 147. $8\frac{1}{7} - 3\frac{1}{9}$

a. $5\frac{2}{63}$ b. 7 c. $\frac{4}{191}$ d. $6\frac{2}{63}$

Evaluate the expression when $x = 4\frac{2}{3}, y = 5\frac{3}{5}$, and $z = 6\frac{3}{4}$.

____ 148. $x+y-z$

a. $4\frac{29}{60}$ b. $3\frac{29}{60}$ c. $4\frac{31}{60}$ d. $3\frac{31}{60}$

149. $x+z$

150. Sandra had $6\frac{11}{12}$ yards of fabric. She used $2\frac{5}{12}$ yards to make a banner. How much fabric does she have left?

Find the product. Simplify if possible.

151. $\frac{2}{49} \times 7$

152. $9\frac{3}{7} \times 2\frac{1}{5}$

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

____ 153. $\frac{1}{4} \cdot \frac{1}{y} + \frac{3}{10}$

a. $\frac{2}{5}$ b. $\frac{1}{5}$ c. $\frac{1}{4}$ d. $\frac{7}{20}$

Find the quotient.

154. $2\frac{1}{2} \div 3$

155. $6\frac{1}{3} \div 9\frac{1}{4}$

Evaluate the expression.

____ 156. $\left(2\frac{1}{4} \div 3\frac{3}{8}\right) \times 4\frac{1}{5}$

a. $\frac{3}{5}$ b. $2\frac{4}{5}$ c. $\frac{10}{63}$ d. $\frac{224}{405}$

157. $\left(4\frac{1}{3}-2\frac{1}{4}\right)\div 5\frac{5}{8}$

The table shows the different floor plans in an apartment complex. Use the table to write the specified ratio.

Floor Plan	Number in Complex
1 bedroom / 1 bath	25
2 bedrooms / 1 bath	12
2 bedrooms / 2 baths	30
2 bedrooms / $2\frac{1}{2}$ baths	15
3 bedrooms / 2 baths	8

158. 2 bedrooms/1 bath to 3 bedrooms/2 baths

159. 2 bedrooms/2 baths to all 2 bedroom apartments

160. 3 bedrooms/2 baths to all apartments

Write the ratio as a fraction in simplest form.

161. $\frac{9}{33}$

162. 56 to 16

Find the unit rate.

163. $35 for 4 CDs

164. 18 ounces in 5 glasses

Use the cross products property to solve the proportion.

165. $\frac{5}{r}=\frac{9}{10}$

166. $\frac{f}{8} = \frac{56}{14}$

167. $\frac{20}{16} = \frac{35}{t}$

Write the percent as a fraction in simplest form.

168. 78%

169. 52%

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

170. $\frac{7}{25}$

171. $\frac{13}{20}$

172. $\frac{7}{8}$

Find the percent of the number.

173. 92.5% of 200

174. 150% of 125

175. In your class, 11 out of 25 students have brown hair. What percent of students do not have brown hair?

176. The baseball team equipment manager received a shipment of new baseballs. Out of 200 balls, 12.5% had defects. How many baseballs were without defects?

Write the percent as a decimal or the decimal as a percent.

177. 12.5

178. 227%

Identify the percent of change as an *increase* or a *decrease*. Then find the percent of change.

179. Original: \$180
New: \$139.50

180. Original: \$12
New: \$33

Use the given information to find the new price.

181. Wholesale price: \$35
Markup: 95%

182. Cost of meal: \$15.95
Tax: 5.5%
Tip: 20%

183. Original price: \$32
Discount: 19.9%

Use the simple interest formula to find the unknown quantity.

184. $I =$?
$P = \$1500$
$r = 8.5\%$
$t = 9$ months

185. $I = \$705.60$
$P =$?
$r = 6\%$
$t = 2$ years

186. $I = \$5.75$
$P = \$230$
$r = 5\%$
$t =$?

Write and then solve a proportion to answer the question.

187. What percent of 30 is 6?

For an account that earns simple annual interest, find the interest earned.

188. $5220 at 5% for 8 years

189. $600 at 8% for 2 years

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

____ 190. 8 plus a number

a. $8 - x$
b. $x - 8$
c. $8 + x$
d. none of these

191. A number minus 11

192. The product of -8 and a number

Write the verbal sentence as an equation. Let y represent the number.

____ 193. The sum of $\frac{1}{4}$ of a number and 120 is 315.

a. $\frac{1}{4}y + 120 = 315$
b. $y\left(\frac{1}{4} + 120\right) = 315$
c. $\frac{1}{4} + 120y = 315$
d. $\frac{1}{4}\left(y + 120\right) = 315$

____ 194. The difference of –10 and a number is 88.

a. $-10 - y = 88$
b. $10 - y = -88$
c. $88 - y = -10$
d. $-88 - (-10) = y$

195. The difference of 7 and the quotient of a number and 6 is -150.

Simplify the expression.

____ 196. $-4x + 2 - 6x + 4$

a. $-10x - 2$
b. $2x - 2$
c. $-10x + 6$
d. $2x + 6$

____ 197. $-8x + 1y - x + 7y$

a. $-9x - 6y$
b. $-7x - 6y$
c. $-7x + 8y$
d. $-9x + 8y$

198. $8h - 6h + 5h$

Simplify the expression.

____ 199. $8(x + 7) + 6(x + 7)$

a. $2x + 2$
b. $14x + 98$
c. $14x + 2$
d. $2x + 98$

200. $2p + 4(m - 6 + 2m) - 12m + 3p$

201. $-8 - 1(-4 + x) - 6x$

Simplify.

____ 202. $5a - 6a + 8a$

a. $7a$
b. $-19a$
c. $19a$
d. $-9a$

203. $2y + 5y + 3y$

204. $4 - 18k + 12k$

Solve the equation. Check your solution.

____ 205. $-3 + 3x = -6$

a. -3
b. -2
c. -1
d. -4

____ 206. $1.4x - 2.1 = -4.9$

a. -3.92
b. -2
c. -9.8
d. 5

207. $-6x + 9 = -21$

Solve the equation. Check your solution.

____ 208. $3t - \frac{7}{15} = \frac{13}{15}$

a. $\frac{4}{3}$ b. 4 c. $\frac{2}{15}$ d. $\frac{4}{9}$

____ 209. $\frac{3}{7}y - 8 = 7$

a. 35 b. $-2\frac{1}{3}$ c. $6\frac{3}{7}$ d. $-\frac{3}{7}$

210. $-8y + 5 + 2y = -37$

211. $\frac{3}{4}p - 2 = \frac{3}{8}$

212. $\frac{r}{16} + 5 = 11$

Write the verbal sentence as an equation. Then solve the equation.

213. $\frac{1}{4}$ of a number added to 6 is 13.

214. Lena wants to buy a computer that costs $900 dollars. She already has $473 dollars saved. Her grandmother will pay her $7 an hour to help her with the yard work. How many hours will Lena need to work before she can afford to buy the computer?

215. The drama club is selling story books to raise money. The supplier charges a one-time fee of $40 for each order and $5 for each story book. Write and solve an equation for the number of story books the drama club can purchase if their budget is $1240.

Use a proportion to answer the question.

____ 216. What percent of 250 is 20?

a. $12\frac{1}{2}\%$ b. 8 % c. 11% d. 5%

____ 217. 56 is 70% of what number?

a. 8 b. 4 c. 39 d. 80

218. What percent of 90 is 47?

219. What number is 5% of 360?

220. 18 is 60% of what number?