Algebra I Summer Math Refresher

Dear Algebra I Student,

I hope that you're all enjoying your first few days of summer! Here's something that will make it a little more fun! In this packet you will find problems that you should complete before the first day of classes. These problems mainly cover skills that, ideally, you should be very familiar with; that you don't even have to think, "How do I solve this problem?" Your work on these problems will be assessed upon your return to school and will be worth 4 homework assignments (a week's worth of assignments). You can check solutions to all the problems on the last four pages of the packet. Please present clear and organized work for each problem on a separate sheet of paper or in a notebook. Please see the bottom of this page for more directions and details on the exact problems you should complete.

You may want to complete this work as soon as possible. If this is the case, please be sure to review your solutions in the days before school starts. The aim of this summer work is to keep your mathematical mind "ticking" in the time that you'll spend away from school. We'll be hitting the ground running in August and you will want to keep up!

See you all in August!

Mr. Lewis
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Directions for Completion:

- The following problems are optional:
  - Page 1: 9, 10, and 11
  - Page 5: 38 and 39
  - Page 6: 43 and 45
  - Page 9: 63 and 64
  - Page 12: 76 and 77
  - Page 13: 78 and 79
  - Page 14: 80, 81, 82, and 83
  - Page 15: 84
  - Page 16: 89
  - Page 17: 93, 94 and 95
  - Page 18: 97 and 99
  - Page 19: 100, 101, 103 and 104
- All other problems should be completed by the start of classes.
- Work should be completed neatly on a separate sheet of paper or in a notebook.

Name _____

Algebra I Math Refresher

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 1. At a movie theater, all tickets are sold for $6.50 each Write an algebraic expression for the total sales in dollars for n tickets.

a. $n + 6.5$ b. $6.5n$ c. $n - 6.5$ d. $\frac{n}{6.5}$

Evaluate the expression for the given value.

_____ 2. $c \cdot \frac{5a+b}{2}$ for $a = 2$, $b = 6$, and $c = 6$

a. 33 b. 48 c. 14 d. 36

_____ 3. $|a|+2|b|$ for $a = 3$ and $b = 2$

a. 7 b. 1 c. -7 d. -1

_____ 4. $-a-12$ for $a = -8$

a. 4 b. -20 c. -4 d. 20

_____ 5. $cd-(d+c)$ for $c = 3$ and $d = -5$

a. -7 b. -23 c. -13 d. -17

_____ 6. $3x^3$ for $x = -3$

a. 729 b. -81 c. 81 d. -729

Simplify the expression.

_____ 7. $-8 \cdot (-3) \cdot (-3) \cdot (-5)$

a. -77 b. -123 c. -53 d. 360

_____ 8. $9a-b-2a-10b$

a. $-7a+11b$ b. $11a+9b$ c. $-11a-9b$ d. $7a-11b$

_____ 9. $3!$

a. 2 b. 5 c. 3 d. 6

_____ 10. ${}_8P_3$

a. 42 b. 336 c. 40,320 d. 56

_____ 11. ${}_{15}C_3$

a. 182 b. 455 c. 2,730 d. 910

Name _____

_____ 12. Identify the property: $c \cdot 1 = c$

a. Identity Property of Addition
b. Commutative Property of Addition
c. Commutative Property of Multiplication
d. Identity Property of Multiplication

Find the Product.

_____ 13. $-5(a+2)$

a. $-5a-3$ b. $-5a+10$ c. $-5a+2$ d. $-5a-10$

Solve the equation.

_____ 14. $-22 = p-25$

a. 3 b. 47 c. -47 d. -3

_____ 15. $\frac{y}{-20} = -3$

a. $\frac{3}{20}$ b. 17 c. -23 d. 60

_____ 16. $\frac{y-5}{3} = 1$

a. -2 b. 8 c. 18 d. 6

_____ 17. $6x+29=5$

a. -4 b. -18 c. 204 d. -144

_____ 18. $\frac{w}{4} - 4 = 3$

a. -4 b. 28 c. 3 d. 11

_____ 19. $4(y-4)=8$

a. -2 b. 2 c. 4 d. 6

_____ 20. $5h-9=-16+6h$

a. 4 b. -7 c. 7 d. 10

Write and solve an equation.

_____ 21. This year, 14,265 people applied to a particular college. The number of applicants increased by 868 from last year. How many people, p, applied last year?

a. $868+p=14,265$; 13,397 people
b. $p-14,265=868$; 15,133 people
c. $p-868=14,265$; 15,133 people
d. $p+14,265=868$; 13,397 people

_____ 22. Which of these numbers is NOT divisible by 2, 3, 4, 5, 6, and 9?

a. 767,880 b. 1,273,320 c. 4,222,368 d. 6,665,400

Name _____

_____ 23. Find the GCF of 91 and 26 using prime factorization.

a. 52 b. 13 c. 17 d. 26

Write the decimal as a mixed number or fraction in simplest form.

_____ 24. 0.54

a. $\frac{27}{50}$ b. $\frac{1}{2}$ c. $\frac{14}{25}$ d. $1\frac{23}{27}$

_____ 25. Determine which rational number is greater, $\frac{17}{20}$ or $\frac{12}{14}$, by rewriting them with their LCDs.

a. $\frac{12}{14}$ b. $\frac{17}{20}$

Order the set of numbers from least to greatest.

_____ 26. $\frac{2}{9}$, 0.67, $-\frac{2}{5}$, 0.6

a. 0.67, 0.6, $\frac{2}{9}$, $-\frac{2}{5}$ c. $-\frac{2}{5}$, 0.6, $\frac{2}{9}$, 0.67

b. $-\frac{2}{5}, \frac{2}{9}$, 0.6, 0.67 d. $\frac{2}{9}$, 0.67, $-\frac{2}{5}$, 0.6

Find the sum or difference. Write your answer as a mixed number or a fraction in simplest form.

_____ 27. $\frac{1}{2}+\left(-\frac{1}{6}\right)$

a. $\frac{2}{3}$ b. $\frac{1}{3}$ c. $\frac{1}{6}$ d. $\frac{13}{24}$

_____ 28. Solve $b+2\frac{1}{6}=-1\frac{3}{8}$. Write the answer as a mixed number or as a fraction in simplest form.

a. $-2\frac{13}{24}$ b. $-3\frac{13}{24}$ c. $\frac{19}{24}$ d. $-\frac{5}{24}$

Find the product.

_____ 29. $-\frac{4}{5}\cdot\frac{1}{3}$

a. $-2\frac{2}{5}$ b. $-\frac{4}{15}$ c. $\frac{4}{15}$ d. $2\frac{2}{5}$

Name _____

_____ 30. Solve $1\frac{1}{7}x+1=4\frac{1}{2}$.

a. $4\frac{13}{16}$ b. $3\frac{7}{16}$ c. $3\frac{1}{16}$ d. 4

Find the quotient.

_____ 31. $-2\frac{2}{3}\div\frac{4}{5}$

a. $-3\frac{1}{3}$ b. $-\frac{5}{6}$ c. $-2\frac{2}{15}$ d. $-2\frac{5}{6}$

Write using exponents.

_____ 32. $7\cdot7\cdot7\cdot7\cdot7\cdot a\cdot a\cdot a\cdot a\cdot a\cdot b\cdot b\cdot b\cdot c\cdot c\cdot c\cdot c$

a. $7^5\cdot5a\cdot3b\cdot4c$ c. $5^7\cdot a^5\cdot b^3\cdot c^4$

b. $7^5\cdot a^5\cdot b^3\cdot c^4$ d. $5^7\cdot5a\cdot3b\cdot4c$

Write the number in standard form.

_____ 33. 9.82×10^3

a. 98,200 b. 982,000 c. 9,820 d. 982

Write the number in scientific notation.

_____ 34. 0.00000199

a. 0.199×10^{-5} c. 1.99×10^{-6}

b. 19.9×10^{-7} d. 199×10^{-8}

Write the ratio in simplest form.

_____ 35. $\frac{40 \text{ inches}}{2 \text{ feet}}$

a. $\frac{5}{3}$ b. 20 c. 240 d. $\frac{3}{5}$

_____ 36. The price of 8.4 ounces of crackers is \$2.42. What is the unit price? Round your answer to the nearest cent.

a. \$0.15 per ounce c. \$28.81 per ounce

b. \$3.47 per ounce d. \$0.29 per ounce

Name _____

Find the unit rate. Round to the nearest tenth, if necessary.

_____ 37. 344 miles in 11 hours

a. 344 miles/hour
b. 3784 miles/hour
c. 0.03 miles/hour
d. 31.27 miles/hour

Use dimensional analysis to convert the measure.

_____ 38. 38 oz = ☐ lb

a. 152 b. 4.75 c. 608 d. 2.38

_____ 39. 15 km/s = ☐ km/min

a. 900 b. 0.9 c. 0.25 d. 54,000

_____ 40. Solve the proportion. Where necessary, round to the nearest hundredth.

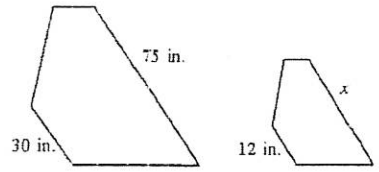
$$\frac{8}{2} = \frac{x+3}{4}$$

a. 13 b. 1 c. 7 d. 16

_____ 41. Use cross products to determine which of the following pairs of ratios *cannot* form a proportion.

a. $\frac{1}{3}, \frac{3}{9}$ b. $\frac{2}{3}, \frac{4}{9}$ c. $\frac{2}{3}, \frac{4}{6}$ d. $\frac{1}{3}, \frac{2}{6}$

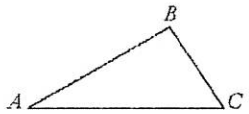
_____ 42. The pair of polygons is similar. Find the value of x.



a. 187.5 in b. 12 in c. 30 in d. 37.5 in

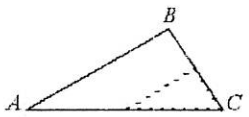
Name _____

_____ 43. Find the image of ΔABC after a dilation with the given center and scale factor.

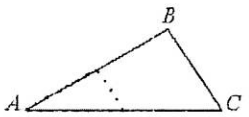


center A, scale factor $\frac{1}{2}$

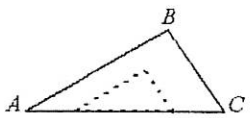
a.



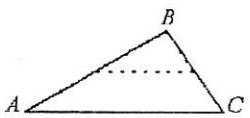
b.



c.



d.



_____ 44. The scale of a map is 1 in : 75 mi. How many actual miles does 0.85 inch represent?

a. 88.2 miles b. 63.75 miles c. 95.6 miles d. 4,781.3 miles

_____ 45. Standing next to each other, a woman who is 70 inches tall and her son cast shadows that are 47 inches and 33 inches, respectively. What is the height of the son, to the nearest inch?

a. 47 in. b. 33 in. c. 49 in. d. 22 in.

Write the fraction as a percent. Round to the nearest hundredth of a percent where necessary.

_____ 46. $\frac{8}{9}$

a. 88.89% b. 1.13% c. 44.44% d. 66.67%

Write the decimal as a percent.

_____ 47. 0.041

a. 41% b. 4.1% c. 410% d. 0.41%

Write the percent as a fraction in simplest form.

_____ 48. $9\frac{1}{6}\%$

a. $\frac{11}{120}$ b. $\frac{9}{100}$ c. $\frac{55}{6}$ d. $\frac{11}{20}$

Name _____

Write the percent as a decimal.

_____ 49. 359%

a. 35.9 b. 35,900 c. 3,590 d. 3.59

_____ 50. Carrie and nine of her friends go out to dinner. The total bill comes to $191.10. They decide to leave a 15% tip. Each person will contribute an equal amount to the total tip. Estimate what each person should contribute.

a. $19.00 b. $28.50 c. $1.90 d. $2.85

_____ 51. A recent survey showed that 48% of 155 students in a school had traveled by plane in the last year. Using fractions, estimate the number of students who have traveled by plane in the last year.

a. 10 students b. 116 students c. 80 students d. 12 students

Write and solve a proportion to find the given percent of the number.

_____ 52. 13% of 596

a. $\frac{n}{100} = \frac{13}{596}$; 2.18

b. $\frac{n}{596} = \frac{13}{100}$; 77.48

c. $\frac{n}{100} = \frac{13}{596}$; 0.22

d. $\frac{n}{596} = \frac{13}{100}$; 7.75

Use a proportion to solve the problem.

_____ 53. 10 is 32% of what number?

a. $\frac{w}{10} = \frac{32}{100}$; 32

b. $\frac{10}{w} = \frac{32}{100}$; 31.25

c. $\frac{w}{10} = \frac{32}{100}$; 3.2

d. $\frac{10}{w} = \frac{32}{100}$; 312.5

_____ 54. During the basketball season, Diane took 134 shots and made about 56% of them.

a. How many shots did Diane make?

b. The team made a total of 498 shots. What percent of the team's made shots did Diane make?

a. 24 shots; 15.1%

b. 753 shots; 27%

c. 240 shots; 27%

d. 75 shots; 15.1%

Name _____

Use an equation to solve the problem.

_____ 55. 224 is 25% of what number?

a. $224 \cdot 0.25 = w$; 560
b. $224 = w \cdot 0.25$; 896
c. $224 \cdot 0.25 = w$; 56
d. $224 = 0.25 \cdot w$; 90

_____ 56. What percent of 8 is 1,280?

a. 1.6% b. 1,600% c. 160% d. 16,000%

Find the percent of increase. Round to the nearest tenth of a percent where necessary.

_____ 57. Which of the following represents a change from 32 to 40?

a. an increase of 20%
b. an increase of 25%
c. an increase of 8%
d. a decrease of 20%

_____ 58. The sales of KIDZ sneakers rise from \$1.5 billion to \$2.8 billion. Find the percent of increase. Round to the nearest tenth of a percent where necessary.

a. 18.7% b. 0.5% c. 86.7% d. 46.4%

Find the percent of decrease. Round your answer to the nearest tenth of a percent where necessary.

_____ 59. Last year a poll of 1000 voters conducted by the staff of Senator Chun found that 522 people approved of the job the senator was doing. This year, a new poll of 1000 voters shows that 423 people approve of the senator's performance. Find the percent of change in the number of voters who approve of the senator's performance, and identify it as an increase or decrease.

a. 19%; increase
b. 23.4%; decrease
c. 23.4%; increase
d. 19%; decrease

_____ 60. The owner of an audio store received a shipment of portable stereos at a cost of \$102.30 each. If he sells the stereos for \$181.99 each, what is the percent of markup? Round to the nearest whole percent.

a. 8% b. 44% c. 78% d. 80%

_____ 61. Find the percent of discount. Round to the nearest whole percent.

regular price: \$120
sale price: \$105.50

a. 12% b. 1% c. 14% d. 15%

Name _____

_____ 62. In Store A, a book that regularly sells for $24.99 is on sale at 15% off. In Store B the same book regularly sells for $27.99 and is on sale at 25% off. Which store sells the book for the lower sale price?

a. Store A; Store A's sale price is $18.74 and Store B's sale price is $23.79.
b. Store A; Store A's sale price is $18.74 and Store B's sale price is $20.99.
c. Store B; Store A's sale price is $21.24 and Store B's sale price is $20.99.
d. Store B; Store A's sale price is $21.24 and Store B's sale price is $23.79.

_____ 63. Find the interest earned in an account with $600 invested at 4.5% annual simple interest for 2 years.

a. $540.00 b. $5,400.00 c. $54.00 d. $13.50

_____ 64. Find the final balance earned in an account with $730 invested at 3% annual simple interest for 4 years.

a. $735.48 b. $87.60 c. $817.60 d. $8,760.00

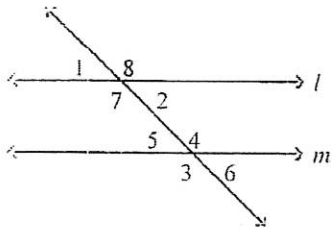
_____ 65. Combine like terms: $q+12q$

a. $-13q$ b. $-11q$ c. $11q$ d. $13q$

_____ 66. Select the measure of the complement or supplement of a 55.1° angle. If there is no complement or supplement, select *no complement or supplement*.

a. 124.9° c. 49.9°
b. 119.9° d. no complement or supplement

_____ 67. Identify the pair of angles as *corresponding*, *alternate interior*, *both*, or *neither*.

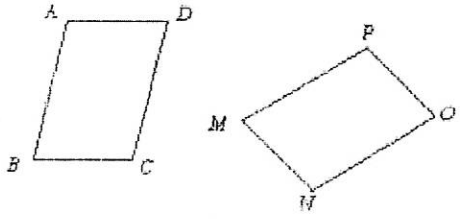


$\angle 6, \angle 2$

a. alternate interior c. corresponding
b. neither d. both

Name _____

_____ 68. If ABCD is congruent to PMNO, then



a. $BC \cong AB$ b. $BC \cong NO$ c. $BC \cong MP$ d. $BC \cong MN$

_____ 69. $\triangle ABC \cong \triangle DEF$. Find m$\angle B$ and m$\angle C$. If necessary, round your answer to the nearest tenth.

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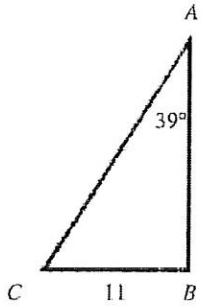

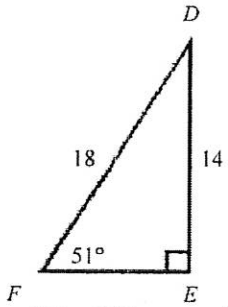

a. 90°; 51° b. 39°; 51° c. 51°; 90° d. 90°; 39°

_____ 70. $\triangle ABC \cong \triangle DEF$. Find CA and AB. If necessary, round your answer to the nearest tenth.

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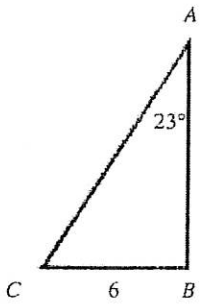
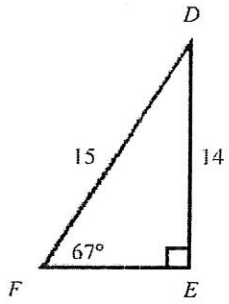




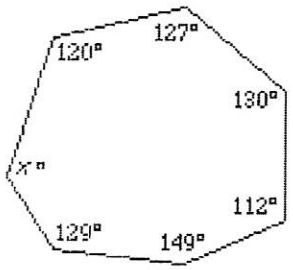
a. 6; 14 b. 14; 15 c. 15; 6 d. 15; 14

Name _____

_____ 71. Classify the triangle with angles measuring 69°, 49°, and 69°.

a. right b. equilateral c. isosceles acute d. isosceles obtuse

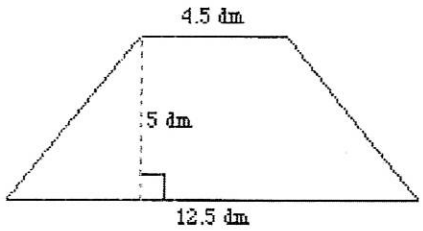
_____ 72. Find the missing angle in the figure.



Nor drawn to scale

a. 126° b. 122° c. 105° d. 133°

_____ 73. Find the area of the figure below.



Not drawn to scale

a. 59.4 dm^2 b. 42.5 dm^2 c. 39.4 dm^2 d. 85 dm^2

_____ 74. A trapezoid has an area of 160 cm^2. The length of one base is 20 cm and the height is 10 cm. What is the length of the other base?

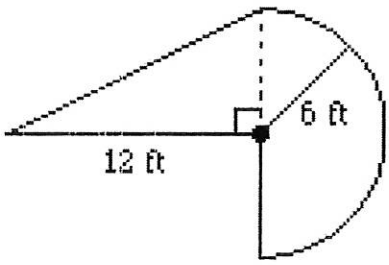
a. 32 cm b. 6 cm c. 9 cm d. 12 cm

_____ 75. Find the diameter of a circle with circumference of 52.7 mm. Round your answer to the nearest tenth.

a. 16.8 mm b. 26.4 mm c. 8.4 mm d. 33.5 mm

Name _____

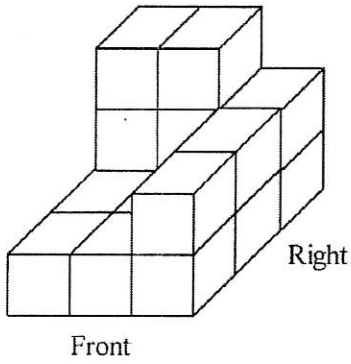
_____ 76. Find the area of the irregular figure. Round your answer to the nearest tenth.



Not drawn to scale

a. 128.5 ft^2 b. 185.1 ft^2 c. 92.5 ft^2 d. 149.1 ft^2

_____ 77. Draw the base plan for the set of stacked cubes. Assume that there are no holes hidden from view.



a.

3	3	2
1	1	2
1	1	2

Right

Front

c.

1	1	3
1	1	3
2	2	2

Right

Front

b.

0	0	2
1	1	3
3	3	3

Right

Front

d.

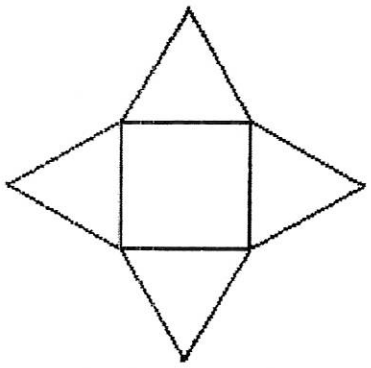
1	1	0
1	1	3
3	3	3

Right

Front

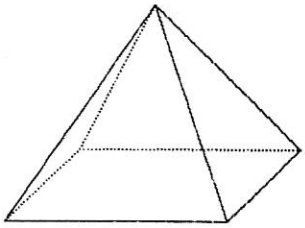
Name _____

_____ 78. Identify the solid that the net forms.

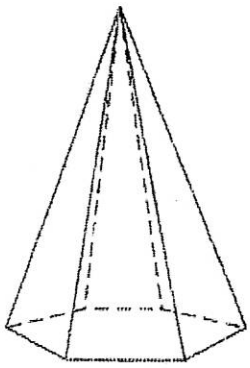


drawing not to scale

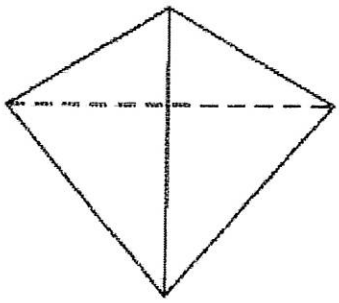
a.



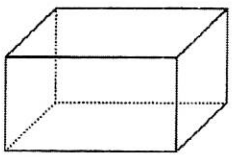
b.



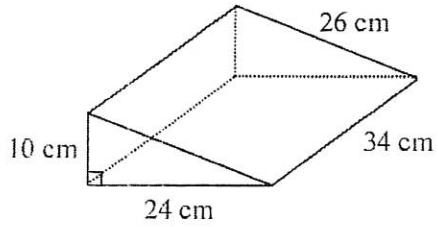
c.



d.



_____ 79. Use a formula to find the surface area of the figure.

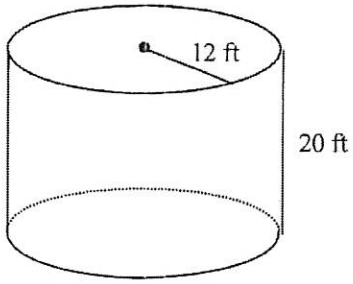


drawing not to scale

a. 2,520 cm^2 b. 2,792 cm^2 c. 4,080 cm^2 d. 2,280 cm^2

Name _____

_____ 80. Use a formula to find the surface area of the cylinder to the nearest whole unit.



drawing not to scale

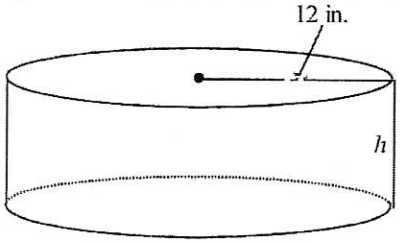
a. about 1,206 ft^2 c. about 1,960 ft^2

b. about 2,412 ft^2 d. about 1,659 ft^2

_____ 81. Find the surface area of a square pyramid with a base edge length of 15 m and a slant height of 36 m. Round to the nearest whole unit, if necessary.

a. 1,305 m^2 b. 2,385 m^2 c. 2,160 m^2 d. 1,080 m^2

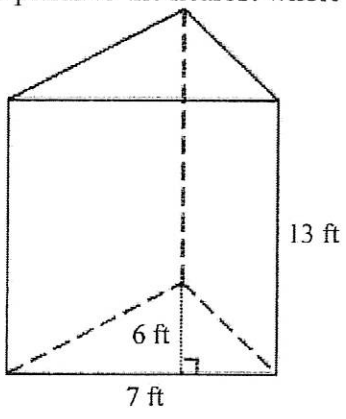
_____ 82. The volume of the cylinder is 1,311.9 in^3. Find the height of the cylinder to the nearest tenth of an inch.



drawing not to scale

a. 9.1 in. b. 109.3 in c. 2.9 in d. 17.4 in

_____ 83. Find the volume of the prism to the nearest whole unit.

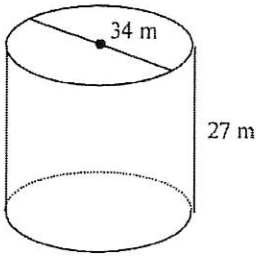


drawing not to scale

a. 546 ft^3 b. 1092 ft^3 c. 273 ft^3 d. 422 ft^3

Name _____

_____ 84. Find the volume of the cylinder to the nearest whole unit.



drawing not to scale

a. 4,700 m^3 b. 24,501 m^3 c. 49,028 m^3 d. 98,055 m^3

_____ 85. A teacher asks her dance class of 22 students, "What is your age?" Their responses are shown below:

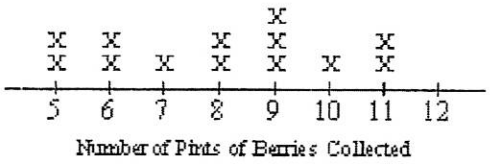
19, 19, 14, 14, 16, 19, 19, 16, 16, 15, 17, 16, 17, 16, 15, 14, 15, 15, 17, 14, 16, 15

Find the mean, median, and mode for the data. If necessary, round to the tenths place.

a. 16.5; 17; 17
b. 16.1; 16; 16
c. 16.1; 17; 16
d. 16.5; 16; 17

_____ 86. There was a berry-picking contest at the Earth Day celebration this year. The line plot below shows the number of pints of berries collected by the participants.

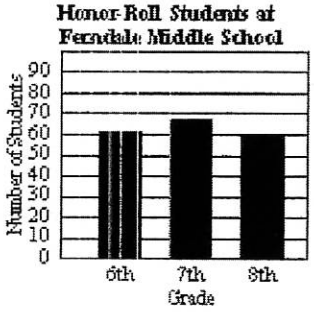
a. What is the median of the data displayed in the line plot?
b. How many people participated in the contest?

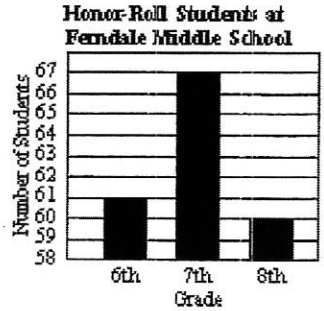


a. 9 pints; 12 pints
b. 8 pints; 11 pints
c. 7 pints; 13 pints
d. 8 pints; 13 pints

Name _____

_____ 87. The graphs below show the number of honor-roll students in each grade at a middle school. Which statement is true?





a. The two graphs are exactly the same.
b. The two graphs use completely different data.
c. The scale on the second graph does not distort the lengths of the bars.
d. The scale on the first graph gives the most accurate picture of the relative number of honor-roll students for each class.

_____ 88. Find the mode and the median of the data in the stem-and-leaf plot below.

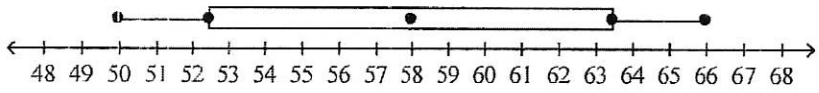
5	4 4 8
6	0 3 5
7	3 4 6
8	2 5
9	7 8

Key: 6 | 3 means 63

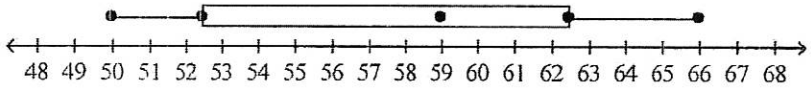
a. no mode; 73
b. 63; 73.5
c. 54; 73
d. no mode; 73.5

_____ 89. Choose the correct box-and-whisker plot for the data below:
60, 63, 53, 66, 65, 58, 51, 55, 58, 51, 58, 62, 53, 66, 61, 51, 65, 52, 54, 50

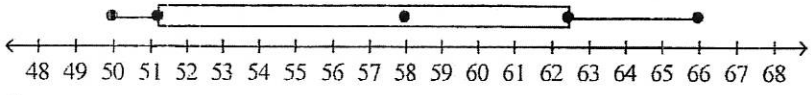
a.



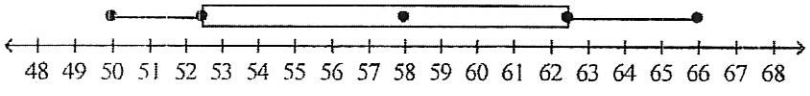
b.



c.

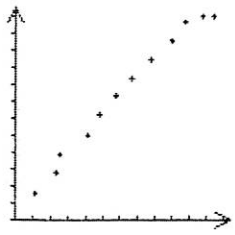


d.



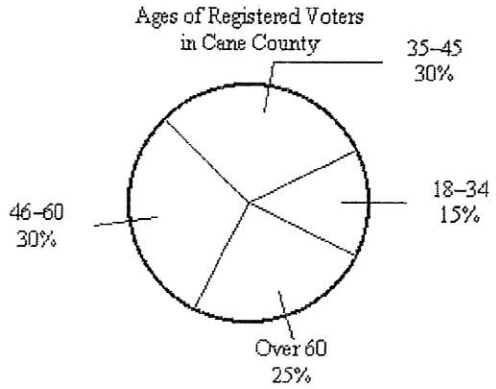
Name _____

_____ 90. Describe the trend in the scatter plot.



a. no trend b. positive trend c. negative trend

_____ 91. The following circle graph was published in the Cane County annual report. If there are 1,000 registered voters in Cane County, how many are 35-45 years old?



a. 150 voters b. 250 voters c. 300 voters d. 350 voters

_____ 92. Given the data: 21, 13, 13, 37, 13, 23, 25, 15
a. Identify the outlier in the data.
b. Find the mean with the outlier.
c. Find the mean without the outlier.

a. 13; 21; 17.6 b. 37; 20; 17.6 c. 37; 17.6; 20 d. 13; 17.6; 21

_____ 93. In how many different ways can 4 people stand shoulder-to-shoulder in a line? Use the counting principle to find the number of permutations.

a. 6 ways b. 24 ways c. 12 ways d. 10 ways

_____ 94. In how many ways can a president and vice-president be chosen from a 22-member math team?

a. 462 ways b. 380 ways c. 21 ways d. 43 ways

_____ 95. A company decides to compare 6 different brands of soft drink by conducting taste tests. Each taste test will compare two different brands. How many tests will the company have to conduct so that each brand is tested against each of the other brands?

a. 30 tests b. 5 tests c. 15 tests d. 11 tests

Name _____

_____ 96. A spinner is divided into eight sections numbered 1 to 8. You spin the spinner 49 times. The results are as follows:

Number	1	2	3	4	5	6	7	8
Number of Times Spinner Landed on Number	3	2	7	8	5	7	10	7

Find P(7). Write the probability as a fraction in simplest form, a decimal, and a percent.

a. $\frac{10}{49}$, 0.203, 20.3%

b. $\frac{10}{49}$, 0.204, 20.4%

c. $\frac{10}{39}$, 0.205, 20.5%

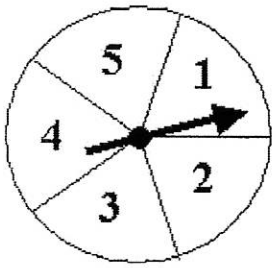
d. $\frac{10}{39}$, 0.256, 25.6%

Decide whether the probability is experimental or theoretical. Explain.

_____ 97. A bag contains 9 tiles numbered 1 to 9. $P(4) = \frac{1}{9}$.

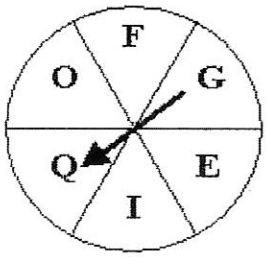
a. Experimental; the result is found by repeating an experiment.
b. Experimental; the result is based on the number of possible outcomes.
c. Theoretical; the result is found by repeating an experiment.
d. Theoretical; the result is based on the number of possible outcomes.

_____ 98. Sam spins a spinner like the one below 16 times. It lands on 4 four times. What is the experimental probability of spinning a 4? Write the probability as a percent. Round to the nearest whole percent.



a. 31% b. 19% c. 20% d. 25%

_____ 99. Suppose you spin the spinner below twice. Find P(vowel, then Q).



a. $\frac{1}{10}$ b. $\frac{1}{9}$ c. $\frac{2}{9}$ d. $\frac{1}{12}$

Name _____

_____ 100. You have four \$1 bills, two \$5 bills, five \$10 bills, and five \$20 bills in your wallet. You select a bill at random. Without replacing the bill, you choose a second bill. Find P(\$1, then \$10).

a. $\frac{9}{31}$ b. $\frac{5}{64}$ c. $\frac{3}{80}$ d. $\frac{1}{12}$

_____ 101. A true-false test has 5 questions. What is the probability of guessing the correct answers to all of the questions?

a. $\frac{1}{25}$ b. $\frac{1}{10}$ c. $\frac{1}{32}$ d. $\frac{1}{7}$

_____ 102. Find the next three terms of the sequence: -1, 9, 19, 29, …

a. 38, 37, 32 b. 40, 51, 62 c. 39, 49, 59 d. 38, 47, 56

_____ 103. Identify the sequence as *arithmetic*, *geometric*, or *neither*: 1.6, 0.8, 0.4, 0.2, …

a. arithmetic b. geometric c. neither

_____ 104. Find the first four terms of the sequence represented by the expression: $3n+5$

a. 5, 8, 11, 14 b. 8, 11, 14, 17 c. 3, 6, 9, 12 d. 0, 8, 11, 14

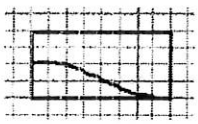
_____ 105. Which graph below most likely represents each of the following:

a. a person's body temperature as he enters a sauna and then cools off in a Jacuzzi

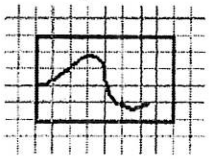
b. the rise and fall of an elevator as it carries passengers from the ground floor to an observation tower.

c. the fines for returning a library book late

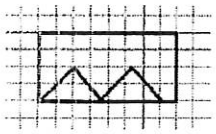
I)



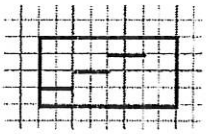
II)



III)



IV)

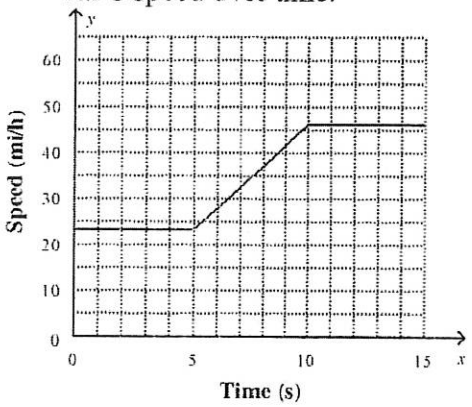


a. II; IV; I b. II; III; IV c. I; III; II d. II; I; IV

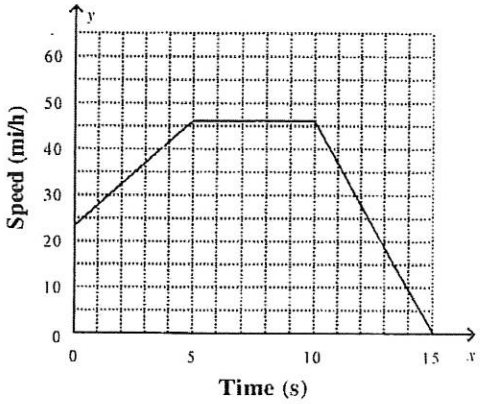
Name _____

_____ 106. A car traveling at 23 mi/h accelerates to 46 mi/h in 5 seconds. It maintains that speed for 5 seconds and then slows to a stop in 5 seconds. Sketch and label a graph showing the car's speed over time.

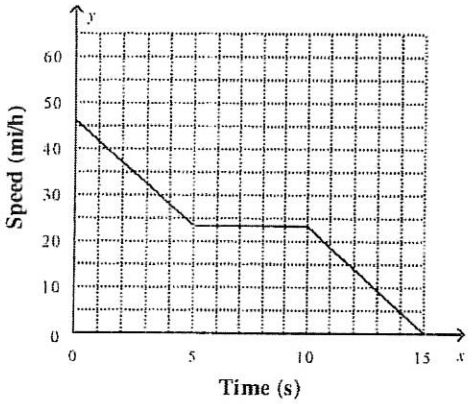
a.



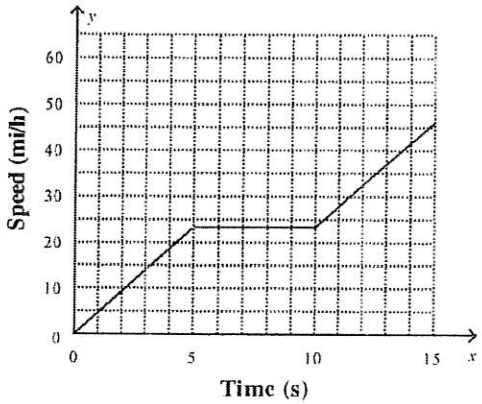
c.



b.



d.



_____ 107. Which is a table of values for: $y = x - 6$?

a.

x	y
−5	1
−8	−14
−7	−13

b.

x	y
−5	−11
−8	−2
−7	−13

c.

x	y
−5	−11
−8	−14
−7	−13

d.

x	y
−5	1
−8	−2
−7	−1

_____ 108. Use the function rule $f(x) = x^2 - 5x + 1$. Find the output $f(-3)$.

a. 7 b. -5 c. 25 d. 5

Answer Key Algebra I Summer Refresher

Question	Answer	Objective
1	B	Writing and Evaluating Algebraic Expressions
2	B	Using Order of Operations
3	A	Finding the Absolute Value of an Integer
4	C	Subtracting Integers
5	C	Dividing Integers
6	B	Using Order of Operations with Exponents
7	D	Multiplying Integers
8	D	Simplifying Algebraic Expressions
9	D	Finding Permutations
10	B	Using Permutation Notation
11	B	Using Combination Notation
12	D	Identifying and Using Properties
13	D	Using the Distributive Property
14	A	Solving Equations by Adding or Subtracting
15	D	Solving Equations by Multiplying or Dividing
16	B	Solving Two-Step Equations
17	A	Solving Two-Step Equations
18	B	Solving Two-Step Equations
19	D	Simplifying Before Solving an Equation
20	C	Solving Equations with Variables on Both Sides
21	A	Solving Equations by Adding or Subtracting
22	C	Identifying Prime and Composite Numbers
23	B	Finding the Greatest Common Factor
24	A	Writing Decimals as Fractions
25	A	Comparing Rational Numbers

Question	Answer	Objective
26	B	Ordering Rational Numbers
27	B	Adding and Subtracting Rational Numbers
28	B	Solving Equations with Rational Numbers
29	B	Multiplying Rational Numbers
30	C	Multiplying Rational Numbers
31	A	Dividing Rational Numbers
32	B	Expressions with Exponents
33	C	Standard Form and Scientific Notation
34	C	Standard Form and Scientific Notation
35	A	Writing Ratios in Simplest Form
36	D	Finding Unit Rates
37	D	Finding Unit Rates
38	D	Converting Units using Dimensional Analysis
39	A	Converting Units using Dimensional Analysis
40	A	Solving Proportions
41	B	Solving Proportions
42	B	Finding Unknown Lengths in Similar Figures
43	C	Locating Dilation Images in Similarity Transformations
45	B	Using Proportions to Solve Problems
46	A	Writing Fractions and Decimals as Percents
47	B	Writing Fractions and Decimals as Percents
48	A	Writing Fractions and Decimals as Percents
49	D	Writing Fractions and Decimals as Percents
50	D	Estimating Percents using Decimals

Question	Answer	Objective
51	C	Estimating Percents using Decimals
52	B	Using Proportions to Find Part of a Whole
53	B	Using Proportions to Find a Whole Amount or Percent
54	D	Using Proportions to Find a Whole Amount or Percent
55	B	Using Proportions to Find a Whole Amount or Percent
56	D	Using Proportions to Find a Whole Amount or Percent
57	B	Finding Percent of Increase
58	C	Finding Percent of Increase
59	D	Finding Percent of Decrease
60	C	Solving Problems Involving Markup
61	A	Solving Problems Involving Discount
62	C	Solving Problems Involving Discount
63	C	Finding Simple Interest
64	C	Finding Simple Interest
65	D	Simplifying Algebraic Expressions by Combining Like Terms
66	A	Using Complementary and Supplementary Angles
67	C	Angles Formed by Parallel Lines
68	D	Identifying Congruent Parts of Congruent Polygons
69	A	Identifying Congruent Parts of Congruent Polygons
70	D	Identifying Congruent Parts of Congruent Polygons
71	C	Classifying Triangles and Quadrilaterals
72	D	Finding the Angle Measures of a Polygon
73	B	Finding the Areas of Polygons
74	D	Finding the Areas of Polygons
75	A	Finding the Circumference of a Circle

Question	Answer	Objective
76	C	Finding the Area of a Circle
77	A	Drawing a Base Plan
78	A	Identifying Nets of Solids
79	D	Finding the Surface Area of Prisms
80	B	Finding the Surface Area of Cylinders
81	A	Finding the Surface Area of Pyramids
82	C	Finding Volumes of Cylinders
83	C	Finding Volumes of Prisms
84	B	Finding Volumes of Cylinders
85	B	Making Frequency Tables and Line Plots
86	D	Making Frequency Tables and Line Plots
87	D	Recognizing and Selecting Appropriate Scale
88	C	Using Stem-and-Leaf Plots
89	D	Making and Using Box-and-Whisker Plots
90	B	Using Scatter Plots to Find Trends
91	C	Reading Circle Graphs
92	B	Choosing the Best Measure of Central Tendency
93	B	Finding Permutations
94	A	Using Permutation Notation
95	C	Using Combination Notation
96	B	Finding Experimental Probability
97	D	Finding Experimental Probability
98	D	Finding Experimental Probability
99	D	Finding the Probability of Independent Events
100	D	Finding the Probability of Dependent Events

Answer Key Algebra I Summer Refresher

Question	Answer	Objective
101	C	Making Predictions
102	C	Describing Sequences
103	B	Describing Sequences
104	B	Evaluating Algebraic Expressions to Write Sequences
105	B	Interpreting and Sketching a Graph
106	C	Interpreting and Sketching a Graph
107	C	Representing Functions
108	C	Using Function Notation