ST. KATHARINE DREXEL PREP MATH DEPARTMENT

SUMMER MATH PACKET 2020

THIS PACKET IS FOR STUDENTS ENTERING:

GEOMETRY

10TH GRADE STUDENTS

DIRECTIONS: IN ORDER TO RECEIVE MAXIMUM CREDIT:

- **ALL PROBLEMS MUST BE COMPLETED.**
- **ALL WORK MUST BE SHOWN ON LOOSE LEAF PAPER AND MUST BE COMPLETED WITH A PENCIL ONLY. PAPERS WILL NOT BE GRADED IF THE WORK IS DONE WITH AN INK PEN.**
- **YOU MAY USE MATH WEBSITES SUCH AS KHAN ACADEMY FOR ASSISTANCE**

DUE DATE: THE SUMMER MATH PACKET MUST BE SUBMITTED THE FIRST WEEK OF SCHOOL FOR A HOMEWORK GRADE. YOUR MATH TEACHER WILL SELECT PROBLEMS FROM THE MATH PACKET TO CREATE YOUR FIRST QUIZ IN YOUR MATH COURSE

SUMMER MATH PACKET – GEOMETRY 2020
10TH GRADE STUDENTS

Name_____

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

Write the fraction in simplest form.

____ 1. $\frac{18}{30}$

a. $3\frac{}{5}$ b. $9\frac{}{16}$ c. $4\frac{}{7}$ d. $2\frac{}{3}$

____ 2. $\frac{115}{245}$

a. $\frac{23}{20}$ b. $\frac{24}{49}$ c. $\frac{23}{49}$ d. $\frac{24}{20}$

____ 3. Identify the fraction that is equivalent to $\frac{2}{7}$.

a. $\frac{8}{28}$ b. $\frac{8}{21}$ c. $\frac{6}{28}$ d. $\frac{10}{28}$

____ 4. Write $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$ using an exponent.

a. 33^6 b. 3^6 c. $3 \cdot 6$ d. 6^3

____ 5. Write 5^2 in standard form.

a. 7 b. 25 c. 10 d. 52

____ 6. Write 4,564 in expanded form using exponents.

a. $\left(4 \cdot 10^4\right) + \left(5 \cdot 10^5\right) + \left(6 \cdot 10^6\right) + \left(4 \cdot 10^4\right)$

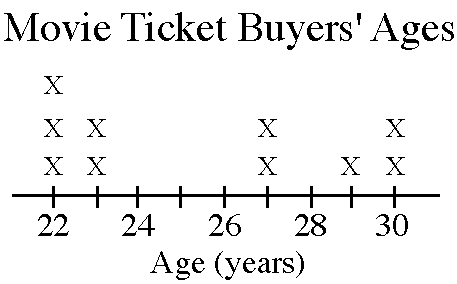
b. $\left(4 \cdot 1000^3\right) + \left(5 \cdot 100^2\right) + \left(6 \cdot 10^1\right) + \left(4 \cdot 1^0\right)$

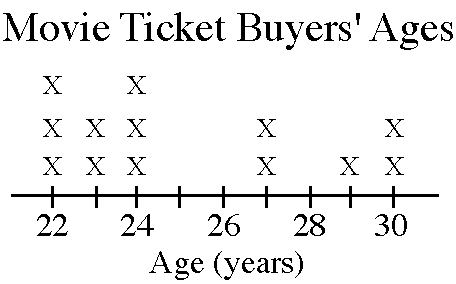
c. $\left(4^3\right) + \left(5^2\right) + \left(6^1\right) + \left(4^0\right)$

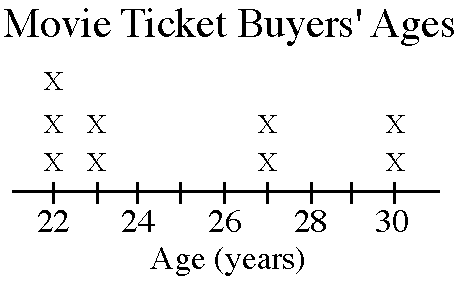
d. $\left(4 \cdot 10^3\right) + \left(5 \cdot 10^2\right) + \left(6 \cdot 10^1\right) + \left(4 \cdot 10^0\right)$

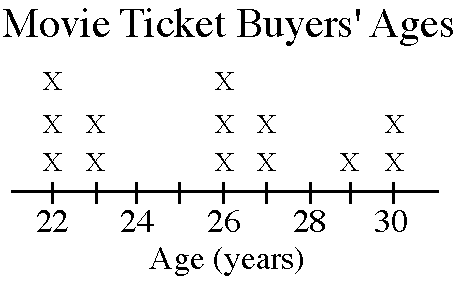
____ 7. The frequency table below shows the ages of the first ten people in line at the movie theater. Make a line plot that shows the same data as the frequency table.

Ages	Frequency
22	3
23	2
27	2
29	1
30	2

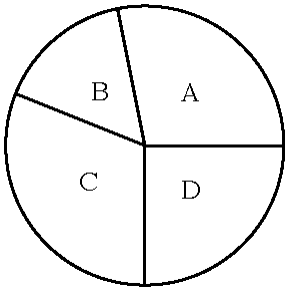
a. 

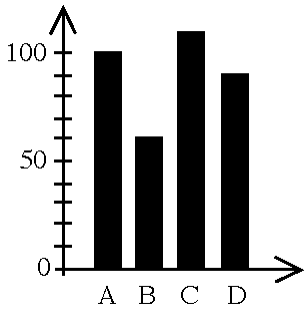
c. 

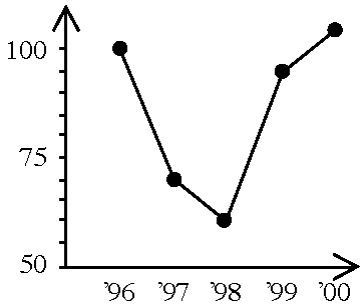
b. 

d. 

____ 8. Which graph or graphs would be best for showing the depth of water in a pond over a period of time?

I. 

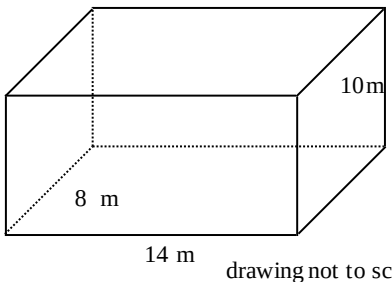
II. 

III. 

a. I b. I, II, or III c. III d. I or II

Find the surface area of the figure.

____ 9.

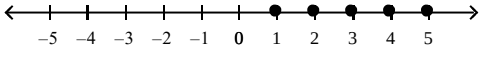


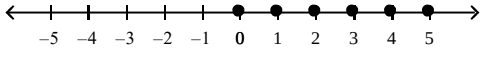
drawing not to scale

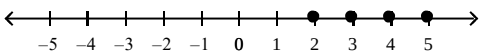
a. 332 m^2 b. 504 m^2 c. 440 m^2 d. 664 m^2

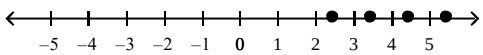
Graph the inequality for the replacement set.

____ 10. $3v - 1 > 4$; positive integers

a. 

c. 

b. 

d. 

____ 11. At your summer job with a research company, you must get a random sample of people from your town to answer a question about spending habits. Which of the following methods is most likely to be random?
a. You survey customers at the local shopping mall.
b. You survey people chosen randomly from the local phonebook.
c. You survey several of your friends.
d. You survey customers at a popular restaurant.

____ 12. $0.01 \times 7.7 =$
a. 0.77 b. 0.077 c. 7.7 d. 0.0077

____ 13. $7.2 \times 15.69 =$
a. 1.1297 b. 1129.68 c. 11.2968 d. 112.968

____ 14. $0.7\overline{)12.25} =$
a. 0.175 b. 1.75 c. 17.5 d. 175

____ 15. $2.7 \div 12.5 =$
a. 2.16 b. 0.00216 c. 0.0216 d. 0.216

____ 16. $\frac{5}{12} + \frac{8}{12} =$
a. $\frac{13}{24}$ b. $1\frac{2}{3}$ c. $3\frac{1}{3}$ d. $1\frac{1}{12}$

____ 17. $\frac{6}{12} - \frac{3}{12} =$
a. $\frac{3}{8}$ b. $\frac{1}{8}$ c. $\frac{3}{4}$ d. $\frac{1}{4}$

____ 18. $\frac{3}{4} + \frac{5}{10} =$
a. $\frac{1}{5}$ b. $1\frac{1}{4}$ c. $1\frac{11}{20}$ d. $\frac{4}{7}$

____ 19. $\frac{6}{10} - \frac{1}{3} =$
a. $1\frac{9}{10}$ b. $\frac{4}{15}$ c. $\frac{14}{15}$ d. $\frac{1}{6}$

____ 20. $6\frac{1}{3} + 5\frac{5}{6} =$
a. $11\frac{4}{27}$ b. $12\frac{1}{6}$ c. $11\frac{8}{15}$ d. $12\frac{10}{27}$

____ 21. $8\frac{3}{4} - 4\frac{1}{4} =$
a. $4\frac{1}{16}$ b. $4\frac{9}{16}$ c. $4\frac{1}{2}$ d. $4\frac{1}{4}$

____ 22. $\frac{3}{6} \times \frac{7}{10} =$
a. $\frac{7}{20}$ b. $2\frac{1}{10}$ c. $\frac{5}{7}$ d. $3\frac{1}{2}$

____ 23. $\frac{5}{12} \div \frac{2}{8} =$

a. $3\frac{1}{3}$ b. $1\frac{2}{3}$ c. 20 d. $\frac{5}{48}$

____ 24. $1\frac{1}{3} \times 1\frac{5}{9} =$

a. $2\frac{25}{27}$ b. $2\frac{2}{27}$ c. $1\frac{5}{27}$ d. $1\frac{2}{9}$

____ 25. $1\frac{1}{3} \div 2\frac{1}{2} =$

a. $3\frac{1}{3}$ b. $\frac{1}{3}$ c. $1\frac{7}{8}$ d. $\frac{8}{15}$

Write as a decimal.

____ 26. $\frac{2}{4}$

a. 0.5 b. 0.2 c. 5 d. 2

____ 27. $3\frac{2}{5}$

a. 0.4 b. 5.5 c. 3.4 d. 1.2

Write as a fraction in simplest form.

____ 28. 0.68

a. $\frac{68}{99}$ b. $\frac{99}{68}$ c. $\frac{17}{25}$ d. $\frac{3}{5}$

____ 29. 0.515151. . .

a. $\frac{1}{2}$ b. $\frac{17}{33}$ c. $\frac{51}{1000}$ d. $\frac{51}{100}$

Write as a percent.

____ 30. 0.63

a. 0.063% b. 6.3% c. 630% d. 63%

____ 31. $\frac{1}{5}$

a. 50% b. 5% c. 20% d. 2%

____ 32. Write 60% as a fraction or mixed number in simplest form.

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

____ 33. Is 112 prime or composite?

a. composite b. prime

Find the greatest common factor of the numbers.

____ 34. 24 and 54

a. 2 b. 7 c. 6 d. 3

____ 35. 6, 21, and 36

a. 3 b. 5 c. 7 d. 6

Find the least common multiple of the set of numbers.

____ 36. 6 and 10

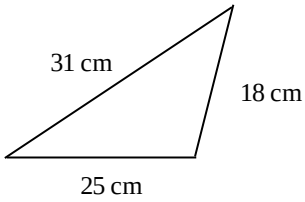
a. 15 b. 30 c. 60 d. 45

____ 37. 4, 9, and 16

a. 576 b. 288 c. 144 d. 72

Find the perimeter of the figure.

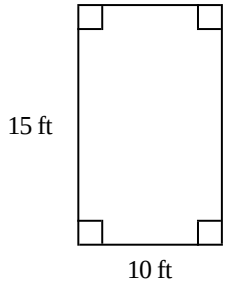
____ 38.



Drawing not to scale

a. 74 cm b. 80 cm c. 68 cm d. 87 cm

____ 39.

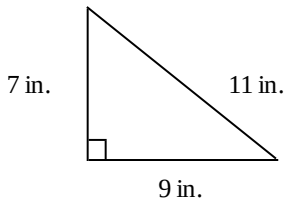


Drawing not to scale

a. 25 ft b. 60 ft c. 50 ft d. 150 ft

Find the area of the figure.

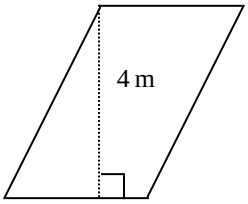
____ 40.



Drawing not to scale

a. 31.5 $in.^2$ b. 173.3 $in.^2$ c. 27 $in.^2$ d. 63 $in.^2$

____ 41.

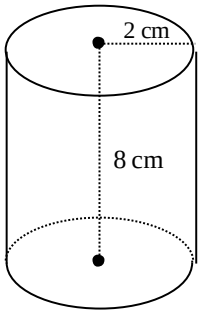


Drawing not to scale

a. 8 m^2 b. 16 m^2 c. 4 m^2 d. 12 m^2

Find the surface area of the figure. Round final answers to the nearest tenth if necessary.

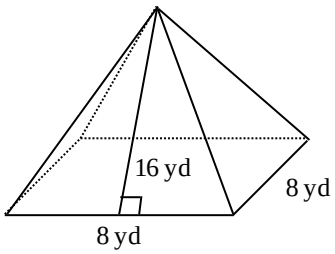
____ 42.



Drawing not to scale

a. 75.4 cm^2 b. 113 cm^2 c. 125.6 cm^2 d. 226.1 cm^2

____43.

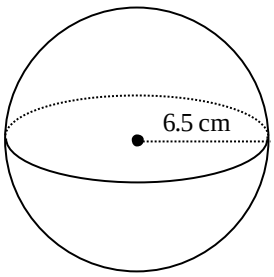


Drawing not to scale

a. 128 yd^2 b. 320 yd^2 c. 192 yd^2 d. 576 yd^2

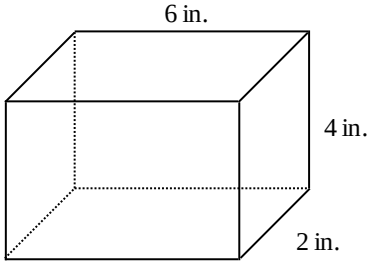
Find the volume of the solid. Round to the nearest tenth if necessary.

____44.



a. 3449.3 cm^3 b. 176.9 cm^3 c. 646.7 cm^3 d. 1149.8 cm^3

____ 45.



Drawing not to scale

a. 24 in.^{3} b. 96 in.^{3} c. 48 in.^{3} d. 16 in.^{3}

a. 62 b. 120 c. 111 d. 60

____ 46. During the past month, you withdrew $22 from your savings account and then deposited $24. If your balance at the end of the month is $120, how much did you have in your account at the beginning of the month?

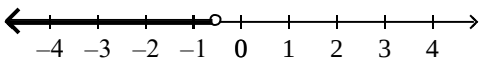
a. $166 b. $74 c. $118 d. $122

____ 47. For $A = \begin{bmatrix} 10 & -6 \\ 12 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} -6 & 2 \\ -5 & 3 \end{bmatrix}$, find $A + B$.

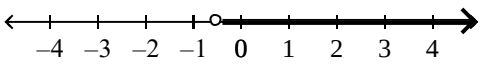
a. $\begin{bmatrix} -4 & 21 \\ 9 & 4 \end{bmatrix}$ b. $\begin{bmatrix} 4 & -4 \\ 7 & 3 \end{bmatrix}$ c. $\begin{bmatrix} 4 & -12 \\ 12 & -5 \end{bmatrix}$ d. $\begin{bmatrix} 16 & -8 \\ 17 & -3 \end{bmatrix}$

____ 48. $-2n + 4 > 5$; negative real numbers

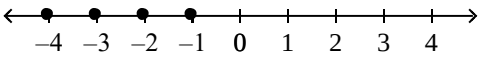
a. $n < -\frac{1}{2}$



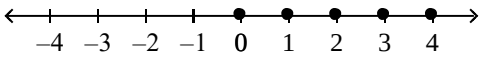
c. $n > -\frac{1}{2}$



b. $n < -\frac{1}{2}$



d. $n > -\frac{1}{2}$



Name the property that the statement(s) illustrates.

____ 49. If $-b = 14$, then $14 = -b$.

a. Commutative Property of Multiplication
b. Reflexive Property
c. Symmetric Property
d. Transitive Property

____ 50. If $d = \frac{9}{f}$ and $\frac{9}{f} = 4$ then $d = 4$.

a. Inverse Property of Multiplication
b. Symmetric Property
c. Transitive Property
d. Reflexive Property

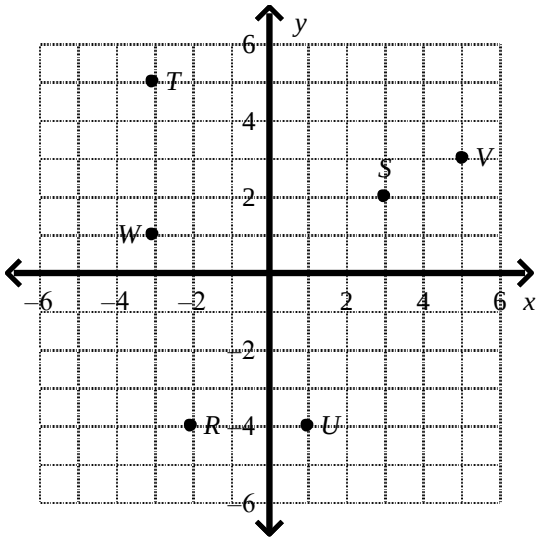
____ 51. $-t = -t$

a. Symmetric Property
b. Reflexive Property
c. Transitive Property
d. Associative Property of Multiplication

____ 52. If $q < 2^5$ and $2^5 < r$, then $q < r$

a. Multiplication Property of Inequality
b. Reflexive Property
c. Symmetric Property
d. Transitive Property

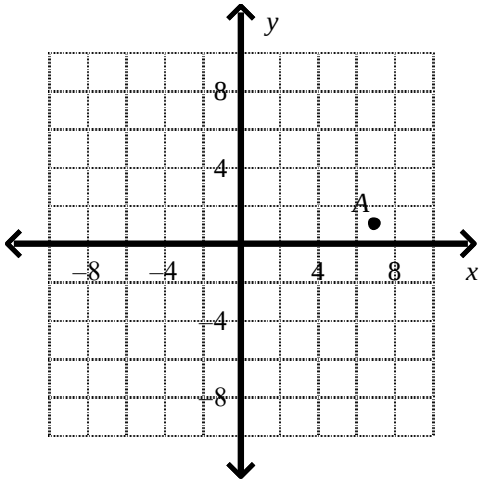
____ 53. Name the coordinates of point *S*.



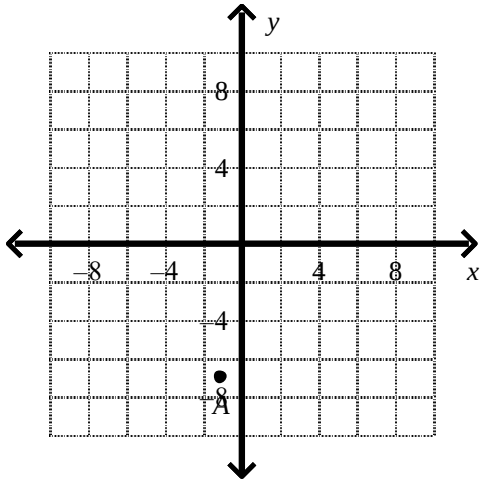
a. (3, 2) b. (3, – 2) c. (2, 3) d. (–3, 2)

____ 54. Graph point $A(-7, -1)$.

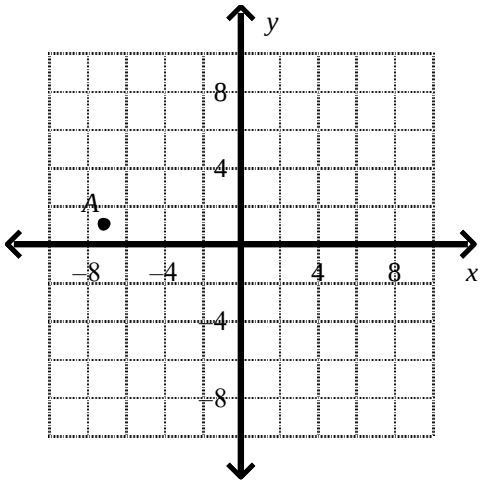
a.



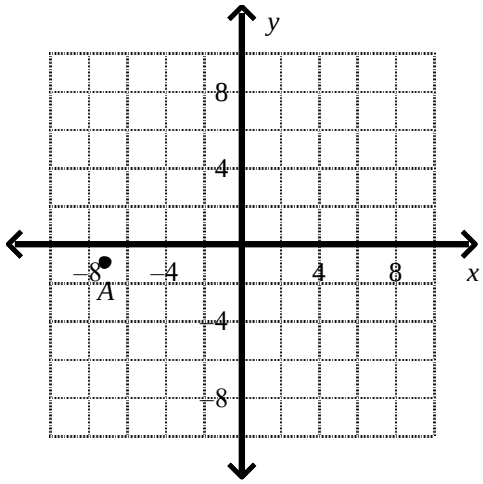
c.



b.



d.



Solve the equation.

____ 55. $6(y + 6) = 90$

a. 21 b. 9 c. 10 d. –21

____ 56. $\frac{2p}{3} - 15 = -19$

a. –19 b. –51 c. –6 d. –1

____ 57. $56 - 13 + 5g = 78$

a. 7 b. 4 c. 9 d. –7

____ 58. $16m = 272$

a. 255 b. 33 c. 17 d. 289

____ 59. $-2(q + 8) = -10q$

a. –2 b. 1 c. 2 d. 5

____ 60. $7x - 7 = 3x + 9$

a. 4 b. 3 c. 1 d. 6

____ 61. $t - 115 = 10$

a. 125 b. 240 c. 123 d. –125

____ 62. Twice a number plus 18 is –16. What is the number?

a. 2 b. 20 c. 1 d. –17

Evaluate the expression for $x = 2$ and $y = -4$.

____ 63. $-3x + 2y$

a. –4 b. –6 c. –14 d. 14

____ 64. $(-x - y)^2$

a. 4 b. 36 c. –4 d. 25

____ 65. $5xy$

a. –40 b. –20 c. 40 d. 10

Simplify the polynomial.

____ 66. $-3 + 5x + 6x^2 + 4 - 3x - x^2$

a. $5x^2 + 1$
c. $5x^2 + 6x + 4$
b. $5x^2 + 2x + 1$
d. $5x^2 + 2y - 3$

____ 67. $-5y^3 - 7y^2 + 5 - 2y^3 + y + 6$

a. $-7y^3 + 11y^2 - 7y$
c. $-7y^3 - 7y^2 + y + 11$
b. $-3y^3 - 7y^2 + y + 11$
d. $-3y^3 + y^2 - 7y + 11$

Complete the equation. Round to the nearest hundredth where necessary.

____ 68. 145 g ≈ ☐ oz

a. 4,118.00 b. 0.20 c. 5.11 d. 368.30

____ 69. 19 in. = ☐ cm

a. 11.80 b. 48.26 c. 41.80 d. 7.48

____ 70. 5 L ≈ ☐ qt

a. 8.00 b. 5.30 c. 4.72 d. 3.13

____ 71. 10 mi ≈ ☐ km

a. 6.21 b. 9.43 c. 10.60 d. 16.10

____ 72. 52 lb ≈ ☐ kg

a. 23.64 b. 83.20 c. 114.40 d. 20.47