

ST. KATHARINE DREXEL PREP MATH DEPARTMENT
SUMMER MATH PACKET 2021-2022

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 2021
10TH GRADE STUDENTS

Name _____

Multiple Choice

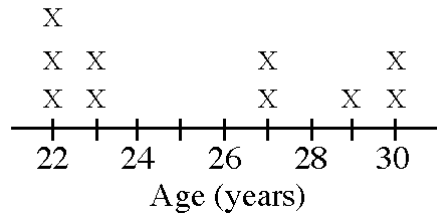
Identify the choice that best completes the statement or answers the question.

Write the fraction in simplest form.

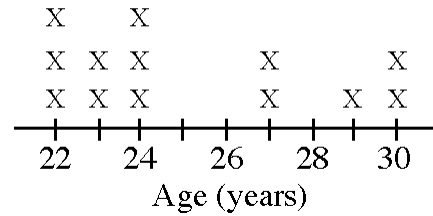
- _____ 1. $\frac{18}{30}$
a. $\frac{3}{5}$ b. $\frac{9}{16}$ c. $\frac{4}{7}$ d. $\frac{2}{3}$
- _____ 2. $\frac{115}{245}$
a. $\frac{23}{20}$ b. $\frac{24}{49}$ c. $\frac{23}{49}$ d. $\frac{24}{20}$
- _____ 3. Identify the fraction that is equivalent to $\frac{2}{7}$.
a. $\frac{8}{28}$ b. $\frac{8}{21}$ 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. $(4 \cdot 10^4) + (5 \cdot 10^5) + (6 \cdot 10^6) + (4 \cdot 10^4)$
b. $(4 \cdot 1000^3) + (5 \cdot 100^2) + (6 \cdot 10^1) + (4 \cdot 1^0)$
c. $(4^3) + (5^2) + (6^1) + (4^0)$
d. $(4 \cdot 10^3) + (5 \cdot 10^2) + (6 \cdot 10^1) + (4 \cdot 10^0)$
- _____ 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

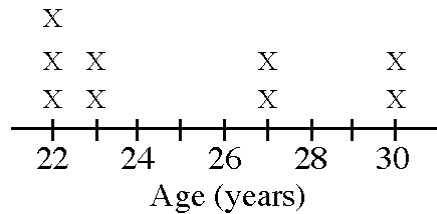
a. Movie Ticket Buyers' Ages



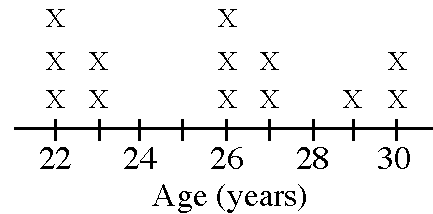
c. Movie Ticket Buyers' Ages



b. Movie Ticket Buyers' Ages

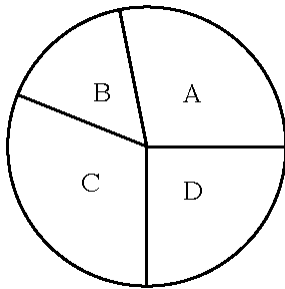


d. Movie Ticket Buyers' Ages

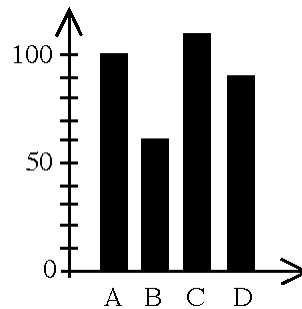


8. Which graph or graphs would be best for showing the depth of water in a pond over a period of time?

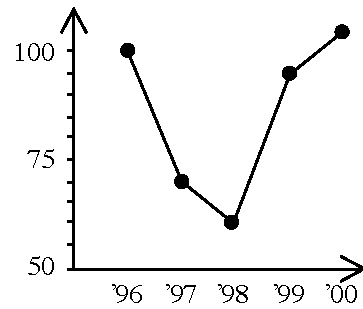
I.



II.



III.



a. I

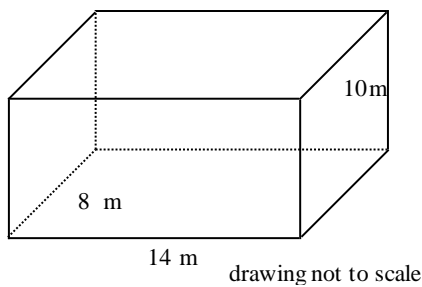
b. I, II, or III

c. III

d. I or II

Find the surface area of the figure.

9.



a. 332 m^2

b. 504 m^2

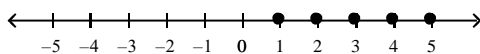
c. 440 m^2

d. 664 m^2

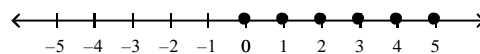
Graph the inequality for the replacement set.

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

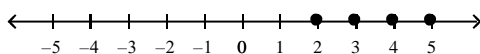
a.



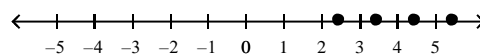
c.



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?
- You survey customers at the local shopping mall.
 - You survey people chosen randomly from the local phonebook.
 - You survey several of your friends.
 - You survey customers at a popular restaurant.
- ___ 12. $0.01 \times 7.7 =$
- 0.77
 - 0.077
 - 7.7
 - 0.0077
- ___ 13. $7.2 \times 15.69 =$
- 1.1297
 - 1129.68
 - 11.2968
 - 112.968
- ___ 14. $0.7 \overline{)12.25} =$
- 0.175
 - 1.75
 - 17.5
 - 175
- ___ 15. $2.7 \div 12.5 =$
- 2.16
 - 0.00216
 - 0.0216
 - 0.216
- ___ 16. $\frac{5}{12} + \frac{8}{12} =$
- $1\frac{13}{24}$
 - $1\frac{2}{3}$
 - $3\frac{1}{3}$
 - $1\frac{1}{12}$
- ___ 17. $\frac{6}{12} - \frac{3}{12} =$
- $\frac{3}{8}$
 - $\frac{1}{8}$
 - $\frac{3}{4}$
 - $\frac{1}{4}$
- ___ 18. $\frac{3}{4} + \frac{5}{10} =$
- $\frac{1}{5}$
 - $1\frac{1}{4}$
 - $1\frac{11}{20}$
 - $\frac{4}{7}$
- ___ 19. $\frac{6}{10} - \frac{1}{3} =$
- $1\frac{9}{10}$
 - $\frac{4}{15}$
 - $\frac{14}{15}$
 - $\frac{1}{6}$
- ___ 20. $6\frac{1}{3} + 5\frac{5}{6} =$
- $11\frac{4}{27}$
 - $12\frac{1}{6}$
 - $11\frac{8}{15}$
 - $12\frac{10}{27}$
- ___ 21. $8\frac{3}{4} - 4\frac{1}{4} =$
- $4\frac{1}{16}$
 - $4\frac{9}{16}$
 - $4\frac{1}{2}$
 - $4\frac{1}{4}$
- ___ 22. $\frac{3}{6} \times \frac{7}{10} =$
- $\frac{7}{20}$
 - $2\frac{1}{10}$
 - $\frac{5}{7}$
 - $3\frac{1}{2}$

- ___ 23. $\frac{5}{12} \div \frac{2}{8} =$
 a. $1\frac{1}{3}$ b. $1\frac{2}{3}$ c. 20 d. $1\frac{5}{48}$
- ___ 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. $1\frac{1}{3}$ b. $1\frac{1}{3}$ c. $1\frac{7}{8}$ d. $1\frac{8}{15}$

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. $1\frac{1}{6}$
- ___ 33. Is 112 prime or composite?
 a. composite b. prime

Find the greatest common factor of the numbers.

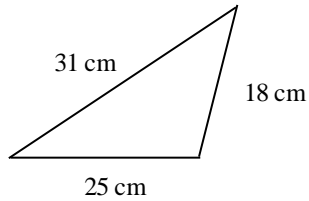
- ___ 34. 24 and 54
 a. 2 b. 7 c. 6 d. 3
- ___ 35. 6, 21, and 36
 a. 3 b. 5 c. 7 d. 6

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

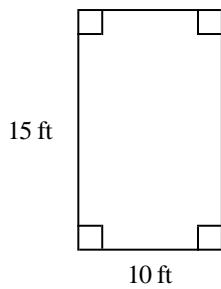
Find the perimeter of the figure.

___ 38.



Drawing not to scale

- a. 74 cm b. 80 cm c. 68 cm d. 87 cm
- ___ 39.

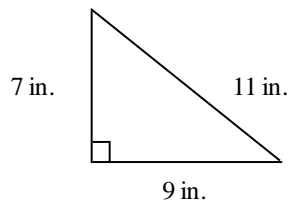


Drawing not to scale

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

Find the area of the figure.

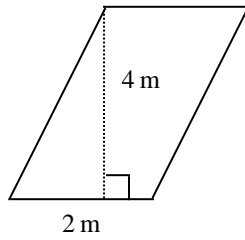
___ 40.



Drawing not to scale

- a. 31.5 in.² b. 173.3 in.² c. 27 in.² d. 63 in.²

___ 41.

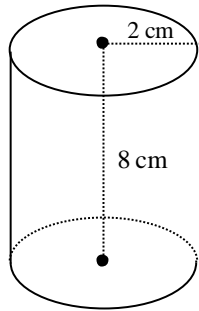


Drawing not to scale

- 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.

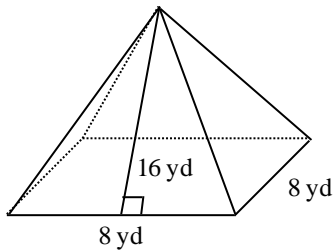
___ 42.



Drawing not to scale

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

___ 43.

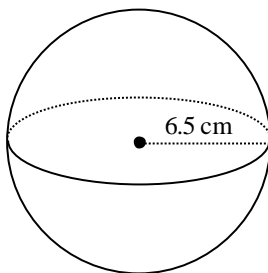


Drawing not to scale

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

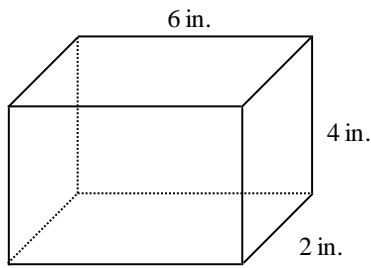
Find the volume of the solid. Round to the nearest tenth if necessary.

___ 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

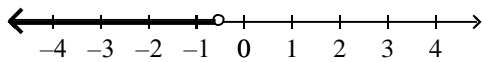
___ 46. During the past month, you withdrew \$22 from your savings account and then deposited \$24. If your balance at the end of the month is \$120, how much did you have in your account at the beginning of the month?
a. \$166 b. \$74 c. \$118 d. \$122

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

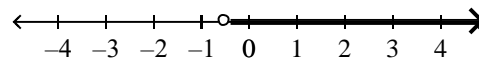
- a. $\begin{bmatrix} -4 & 21 \\ 9 & 4 \end{bmatrix}$ b. $\begin{bmatrix} 4 & -4 \\ 7 & 3 \end{bmatrix}$ c. $\begin{bmatrix} 4 & -12 \\ 12 & -5 \end{bmatrix}$ d. $\begin{bmatrix} 16 & -8 \\ 17 & -3 \end{bmatrix}$

___ 48. $-2x + 4 > 5$; negative real numbers

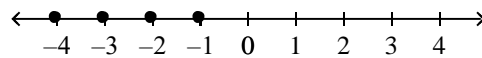
a. $x < -\frac{1}{2}$



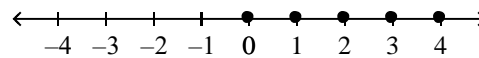
c. $x > -\frac{1}{2}$



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



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



Name the property that the statement(s) illustrates.

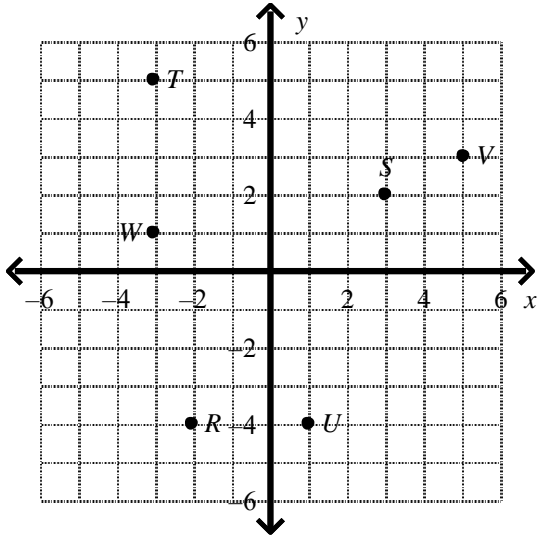
___ 49. If $-b = 14$, then $14 = -b$.
a. Commutative Property of Multiplication
b. Reflexive Property
c. Symmetric Property
d. Transitive Property

___ 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. $-t = -t$
- Symmetric Property
 - Reflexive Property
 - Transitive Property
 - Associative Property of Multiplication

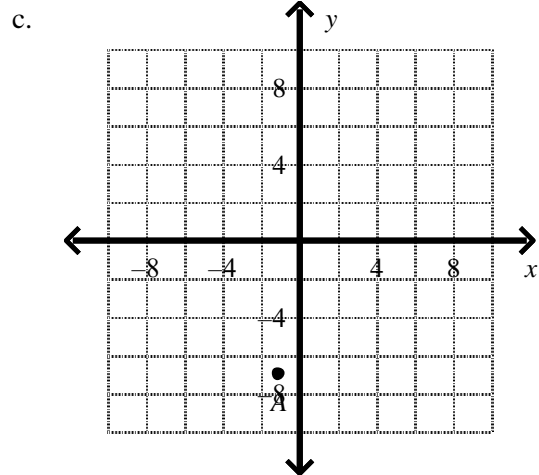
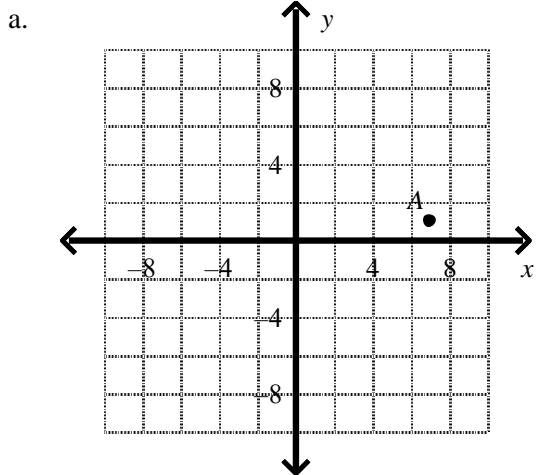
- ___ 52. If $q < 2^5$ and $2^5 < r$, then $q < r$
- Multiplication Property of Inequality
 - Reflexive Property
 - Symmetric Property
 - Transitive Property

- ___ 53. Name the coordinates of point S.

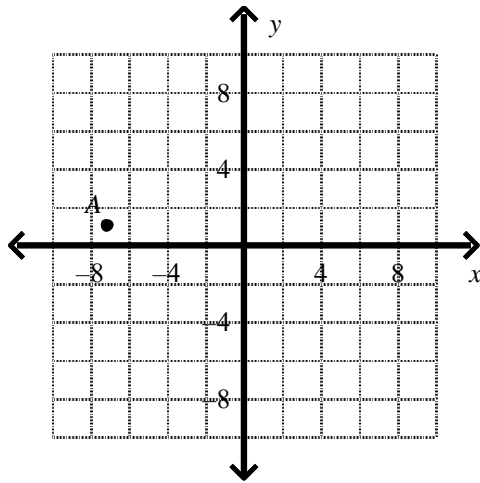


- a. (3, 2) b. (3, -2) c. (2, 3) d. (-3, 2)

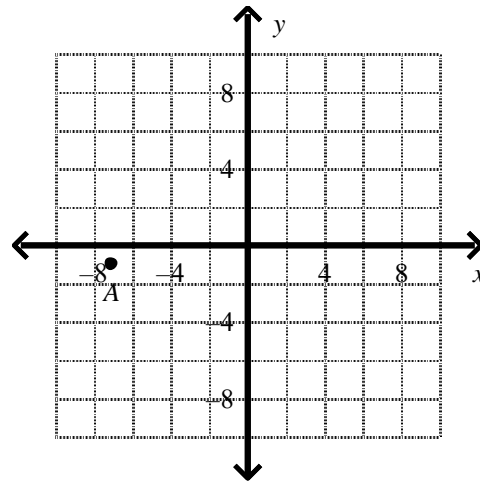
- ___ 54. Graph point $A(-7, -1)$.



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

