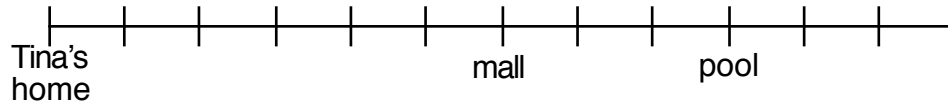1. On the map shown below, the intervals all represent the same distance. The mall is $1\frac{1}{2}$ miles from Tina's home. How far is the pool from Tina's home?

Tina's
home

mall   pool

    a.   2 miles

    b. $2\frac{1}{4}$ miles

    c. $2\frac{1}{2}$ miles

    d. $2\frac{1}{6}$ miles

    e. $2\frac{2}{3}$ miles

2. Find the area of the enclosed polygon. The dots are spaced 1 unit apart.

    a. $6\frac{1}{2}$ square units

    b. 7 square units

    c. $7\frac{1}{2}$ square units

    d. 8 square units

    e. $8\frac{1}{2}$ square units
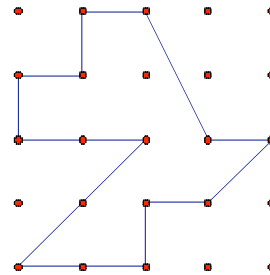
3. Mom is making fudge for a party. She doesn't have time to go to the store to buy more ingredients and the amount of fudge she makes is limited by the amount of cocoa she has on hand. She has 14 tablespoons of cocoa and wants to make enough fudge to use all of the cocoa. The recipe calls for 1 ½ cups of sugar and 5 tablespoons of cocoa in addition to other ingredients. If she makes enough fudge to use the entire 14 tablespoons of cocoa, how much sugar will she use?

    a.   0.54 cups
   b.   4.1 cups
    c.   4.2 cups
   d.   4.7 cups
    e.   46.7 cups

4. A new kind of clock goes tick, tack, tock, ding, dong, and then it repeats. It continues this same sequence of noises, one noise per second. At 1 second after midnight, the clock went "tick." What noise did the clock make at the 88th second after midnight?

   a. tick
   b. tack
   c. tock
   d. ding
   e. dong

5. A troll went to work in the mine. Because, the troll is very greedy, he demanded that he be given his paycheck at the end of each day. Furthermore, he insisted that he be paid $100 for his first day on the job and that he get a $50 raise every day starting his second day. (On day 2, he would get $150; $200 on day 3, and so on.) How much will his paycheck be at the end of his 100th day on the job?

   a. $5,050
   b. $5,100
   c. $15,050
   d. $14,950
   e. $10,050

6. Suppose a new operation, *, is defined so that $a*b = a^2 + b$. (For example, $2*3 = 2^2 + 3 = 7$.) What is (3*2)*4?

   a. 24
   b. 25
   c. 40
   d. 123
   e. 125

7. If the figure shown below represents $\frac{3}{2}$, which of the choices would represent $\frac{1}{2}$? (This means $\frac{1}{2}$ of 1 not $\frac{1}{2}$ of $\frac{3}{2}$.)

   a.
   b.
   c.
   d.
   e.

8. Which polygon is impossible?

    a.   A parallelogram with congruent diagonals
    b.   A pentagon that is not convex
    c.   A triangle with exactly two of its three angles acute
    d.   A trapezoid with exactly one of its four angles a right angle
    e.   A hexagon in which all interior angles are congruent

9. In which picture is the dashed line not a line of symmetry?

    a.

    b.

    c.

    d.
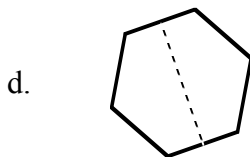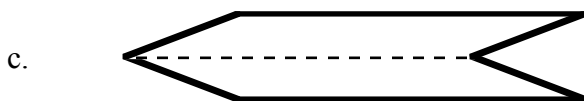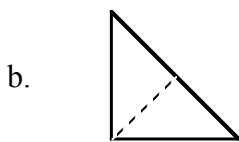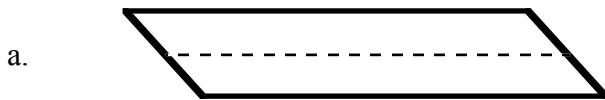
    e.   In every picture the dotted line is a line of symmetry.

10. A student is writing the counting numbers starting with 1. He has written 846 digits. What is the last number he wrote? (Note: 3 is a <u>digit</u> in the <u>number</u> 432.)

    a.   159
    b.   312
    c.   318
    d.   408
    e.   657

11. Evaluate $\dfrac{2.4 + 3}{4.8 + 6}$

    a.   0.25
    b.   0.5
    c.   1
    d.   9.025
    e.   7.125

12. In a group of 16 people -- the mean (average) age is 25. After Joe leaves the group, the mean age falls to 22. How old is Joe?

    a. 70
    b. 65
    c. 60
    d. 55
    e. 23.5

13. Which of the following lists of numbers is in order from least to greatest?

    a. $.01, \dfrac{1}{10}, \dfrac{1}{.1}, \dfrac{2}{.01}, \dfrac{1}{.02}$

    b. $.01, \dfrac{1}{10}, \dfrac{1}{.1}, \dfrac{1}{.02}, \dfrac{2}{.01}$

    c. $.01, \dfrac{2}{.01}, \dfrac{1}{.02}, \dfrac{1}{.1}, \dfrac{1}{10}$

    d. $\dfrac{1}{10}, .01, \dfrac{1}{.1}, \dfrac{1}{.02}, \dfrac{2}{.01}$

    e. $\dfrac{1}{10}, .01, \dfrac{1}{.1}, \dfrac{2}{.01}, \dfrac{1}{.02}$

14. Mrs. Brown made a stem and leaf plot to show the grades on the first exam in her Spanish class. Use this information to determine the median grade of the class.

Test Scores out of 100

Stem	Leaf
9	2256
8	114666
7	588
6	58

    a. 81
    b. 83
   c. 84
    d. 85
    e. 86

15. 115% of 24 is equal to which of the following?

    a. 115 x 24
    b. 115 x 2.4
    c. 115 x 0.24
    d. 11.5 x 24
    e. 1.15 x 2.4

16. A rectangular room is 9 feet wide and 12 feet long. Tiles for the floor are squares that are 9 inches on each side. How many tiles are needed to cover the floor of this room?

    a. 192 tiles
    b. 144 tiles
    c. 1728 tiles
    d. 108 tiles
    e. $133\frac{1}{3}$ tiles

17. The following bar chart shows the number of absences for Mr. Reed's homeroom class. Use this information to determine the mean number of absences for students in Mr. Reed's class

Number of Absences
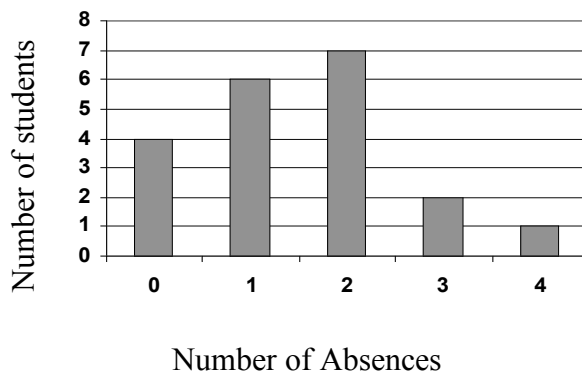
    a. 1
    b. 1.5
    c. 1.7
    d. 2
    e. 4

18. A rope that is $73\frac{1}{2}$ feet long is to be cut into jump-ropes that are $7\frac{3}{4}$ feet long. After the most jump-ropes possible have been made, how much rope will be left over?

    a. $\frac{15}{31}$ feet
    b. $\frac{15}{31}$ inches
    c. 8 inches
    d. $3\frac{3}{4}$ feet
    e. $3\frac{3}{4}$ inches

19. The dessert preferences of a group of sixth graders are described in the following table:

	Ice cream	Chocolate Cake	Banana Pudding	Chocolate Chip Cookies	Total
boy	15	12	6	10	43
girl	17	7	5	11	40
Total	32	19	11	21	83

Favorite Dessert (heading spanning Ice cream, Chocolate Cake, Banana Pudding, Chocolate Chip Cookies)

One child is randomly selected from this group. What is the probability that the person selected is a boy or someone whose favorite dessert is ice cream?

a. $\dfrac{15}{83}$

b. $\dfrac{32}{83}$

c. $\dfrac{43}{83}$

d. $\dfrac{60}{83}$

e. $\dfrac{75}{83}$

20. Which of the following people is more likely to be one meter tall?

a. A newborn baby
b. A 3 year-old
c. A 10 year-old
d. Your math teacher
e. A professional basketball player

21. Which statement is true?

a. $\left(\dfrac{3}{4}\right)^{50}$ is more than $\dfrac{3}{4}$ but less than 1.

b. $\left(\dfrac{3}{4}\right)^{50}$ is more than 1 but less than 5.

c. $\left(\dfrac{3}{4}\right)^{50}$ is more than 5.

d. $\left(\dfrac{3}{4}\right)^{50}$ is less than $\dfrac{3}{4}$ but more than 0.

e. $\left(\dfrac{3}{4}\right)^{50}$ is less than 0.

22. The height, length, and width (measured in centimeters) of a rectangular prism are whole numbers greater than 1. Its volume is 1001 cm^3. What is its surface area?

    a. There is not enough information to determine the surface area.
    b. 60 square centimeters
    c. 311square centimeters
    d. 339 square centimeters
    e. 622 square centimeters

23. A dog is on a 20-foot leash that is attached to the corner of a building. The dog's food bowl is 20 feet from the corner on one side of the building. The dog's water bowl is 20 feet from the corner on the other side of the building as shown in the picture. If the dog walks from the food bowl to the water bowl keeping the leash pulled as far from the corner as possible, how many feet will the dog travel? (Round to the nearest tenth of a foot.)
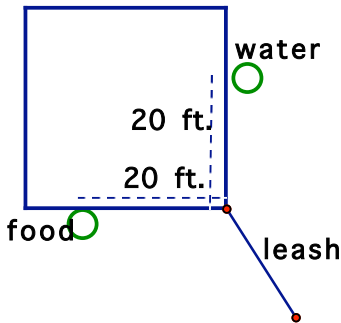
    a. 135.6 ft.
   b. 120.0 ft.
    c. 100.0 ft
    d. 62.8 ft.
    e. 94.2 ft.

24. To the right is shown the graph of the equation $y = 2x + 4$.
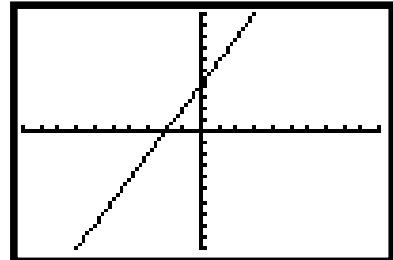

Which of the following statements is true?

    a. The graph of the equation $y = x + 2$ is parallel to and above to the graph of $y = 2x + 4$.
    b. The graph of the equation $y = x + 2$ is parallel to and below the graph of $y = 2x + 4$.
    c. The graph of the equation $y = x + 2$ intersects the given graph at the point (-2, 0).
    d. The graph of the equation $y = x + 2$ intersects the given graph at the point (0, -2).
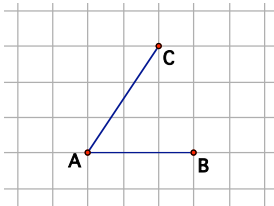   e. The graph of the equation $y = x + 2$ is exactly the same line as the graph of $y = 2x + 4$.

25. In the following table, the operation is listed above its result.

A*B	C*D	A*E	B*D

Which of the following is C*E?

a.

b.

c.

d.

e.

26. In the picture below, if the length of segment AB is 3 units, what is the length of segment AC?

   a. 3 units
   b. $\sqrt{13}$ units
   c. 5 units
   d. $\sqrt{5}$ units
   e. 4 units

27. Which of the following statements is false?

   a. Every prime number has exactly two factors.
   b. Every perfect square has an odd number of factors.
   c. Every composite number can be written as the product of prime numbers.
   d. Every number that has 8 as a factor also has 4 as a factor.
   e. Every number that is odd has a factor of 3.

28. Evaluate $\dfrac{\left|\,^{-}7+4\,\right|\times 2}{8}$

    a. $\dfrac{-3}{4}$

    b. $\dfrac{-11}{4}$

    c. $\dfrac{3}{4}$

    d. $\dfrac{11}{4}$

    e. $\dfrac{1}{8}$

29. Of the choices listed below, what is the best value of the position marked with the arrow on the number line?
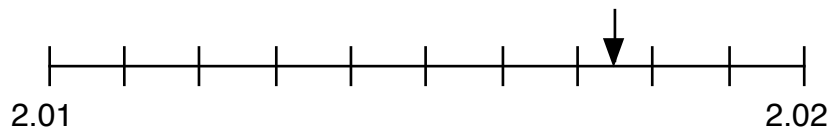
    a. 2.075
    b. 2.015
    c. 2.017
    d. 2.0165
    e. 2.0175

30. At Eastview Elementary School, students are given a student identification code -- which consists of two letters followed by three digits. The first letter must be a K, F, S, T, U or V; the second letter is any letter chosen from A – Z; each digit can be any digit chosen from 0 – 9. Find the total number of possible student codes.

    a. 113,724
    b. 156,000
    c. 108,000
    d. 75,600
    e. 150,000