1. Collin needs three wooden boards to repair his porch. The lengths he needs are 2.2 meters, 2.82 meters, and 4.25 meters. He purchases a board that is 10 meters long and cuts it into three sections. How much of the board that Collin purchased will be left?

   A. 1.43 meters
   B. .37 meters
   C. .98 meters
   D. .73 meters
   E. .83 meters

2. An airport offers two shuttles that run on different schedules. Shuttle A runs every 6 minutes. Shuttle B runs every 9 minutes. If both shuttles leave the airport at 4:00 P.M., at what time will they next leave the airport together?

   A. 4:09 P.M.
   B. 4:18 P.M.
   C. 4:27 P.M.
   D. 4:06 P.M.
   E. 4:32 P.M.

3. Albert used $^3/_8$ of a half-gallon of paint. What fraction of a gallon of paint did he use?

   A. $^2/_5$
   B. $^3/_4$
   C. $1\frac{1}{3}$
   D. $^3/_{16}$
   E. $^1/_2$

4. What is the area of a square that has a side length of 3x?

   A. 9x
   B. $9x^2$
   C. 12x
   D. 6x
   E. $6x^2$

5. A baker is making an oversized sheet cake for school. The recipe calls for 2 cups of sugar for every 3 cups of flour. How many cups of flour are needed, if the baker uses 18 cups of sugar?

   A. 6 cups
   B. 32 cups
   C. 18 cups
   D. 12 cups
   E. 27 cups

6. A class of 26 students order the items shown

Quantity	Item	Unit Price
27	Doughnut	1.25
5	Gallon of Juice	1.99
1	Pack of Napkins	1.25

   If the class of 26 students agreed to split the cost evenly, and assuming there is no tax, which equation can be used to find t, the amount each student should pay?

   A. t=(27 x 1.99 + 5 x 1.25 +1.25) / 26
   B. t= 27(1.25) + 5 (1.99) + 1.25
   C. t= (27 x 1.25 + 5 x 1.99 +1.25) / 26
   D. t= 26 x 1.25 +5 x 1.99 + 1.25 / 26
   E. t=(27 x 1.25 + 5 x 1.99 +1.25) / 27

7. Which expression is equivalent to $5 + 4^2$ x 2?

   A. 21 x 2
   B. $5 + 8^2$
   C. 9^2 x 2
   D. 5 + 32
   E. $10 + 4^2$

8. The cost of renting roller blades is $4 plus $3.50 for each hour that the roller blades are rented. Which expression can be used to find the cost in dollars of renting roller blades for h hours?

   A. $4h + 3.5$
   B. $3.5(h + 4)$
   C. $3.5 - 4h$
   D. $4(3.5 + h)$
   E. $3.5h + 4$

9. Craig planted ¾ acre with vegetables. He then splits the vegetable garden into sections that are $^1/_6$ of an acre. How many different $\frac{1}{6}$ acre sections will Craig have in his vegetable garden?

    A. 4 ½
    B. 2 ½
    C. $^2/_9$
    D. 3 ½
    E. $^1/_8$

10. What is the total number of outcomes if you can choose from 8 different cell phone styles that come in 4 different colors?

    A. 12
    B. 24
    C. 26
    D. 32
    E. 36

11. A simple recipe for a loaf of bread calls for mixing $1\frac{1}{2}$ pints of ice cream with $1\frac{2}{3}$ cups of self-rising flour, and baking the mixture.   If someone has 8 pints of ice cream and 6 cups of self-rising flour, what is the maximum number of loaves of bread that can be made without buying extra ingredients if the recipe is followed? An entire loaf of bread must be made (no partial loaves).

    A. 2
    B. 3
    C. 4
    D. 5
    E. 6

12. If account codes for a certain company are assigned as follows: two letters and then three one digit numbers, how many different account codes can be made? Assume that letters and digits cannot be repeated.

    A. 1,757,600
    B. 468,000
    C. 18,720
    D. 676,000
    E. 260

13. Let a and b be integers and define the operation ⊕ as follows:

$$a \oplus b = ab(a + b)$$

Does there exist an integer which is an identity element for ⊕ ?

A. Yes and it is 1
B. Yes and it is 0.
C. Yes and it is -1.
D. Yes and it is ½.
E. There is not exist an identity element for ⊕

14. By observing patterns in the following, find the sum 1 + 3 + 5 + 7 + 9 + ….. + 99.

1 + 3 = 4

1 + 3 + 5 = 9

1 + 3 + 5 + 7 = 16

1 + 3 + 5 + 7 + 9 = 25
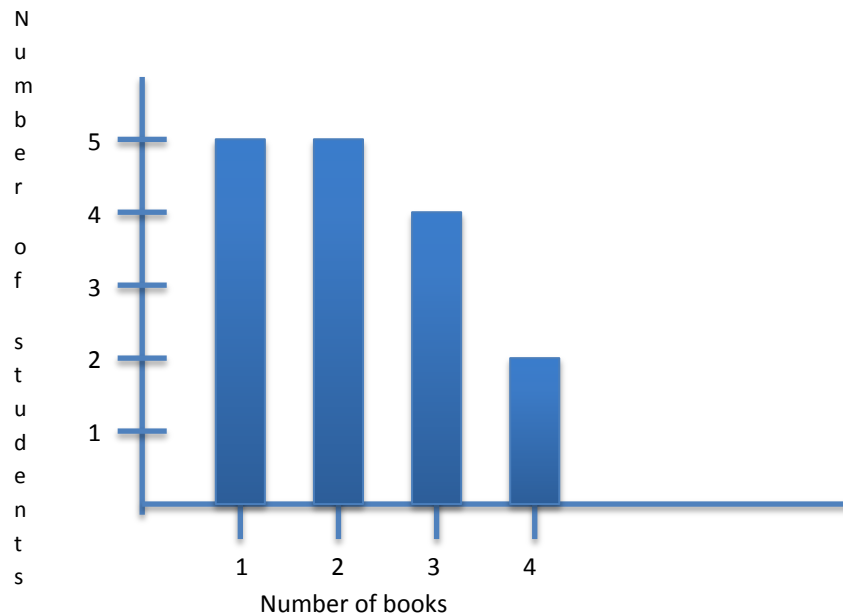
A. 2400
B. 2401
C. 2500
D. 2601
E. 9801

15. A recipe requires 2/3 of a cup of yogurt. Rachel has ½ cup of yogurt. How much of the recipe can she make?

A. 1/6
B. 1
C. 1/2
D. 1/3
E. 3/4

16. Following is data for number of books read in a six-week period by sixteen students in a sixth grade class.

Which is true?

A. The mean number of books read and the median number of books read are the same.
B. The mean is larger than the median.
C. The median is larger than the mean.
D. The mode is 5.
E. Two of the above four statements are true.

17. Andre and his friends were hungry after coming home from school. They headed immediately for the cookie jar. Andre ate half of the cookies. Jamon ate one-third of what remained. Simon ate one half of the rest. Dionne ate one cookie which was one-fourth of what remained. How many cookies were in the jar?

A. 12
B. 18
C. 24
D. 36
E. there is not enough information to determine the answer

18. Mrs. Random gives tests randomly. The odds of her giving a test to not giving a test on any given day in her first period class are 1 to 4. During her 30 year teaching career she has taught 5,400 first period classes.   Approximately how many tests has she given in first period?

    A. 1080
    B. 1350
    C. 1800
    D. 4320
    E. 4720

19.
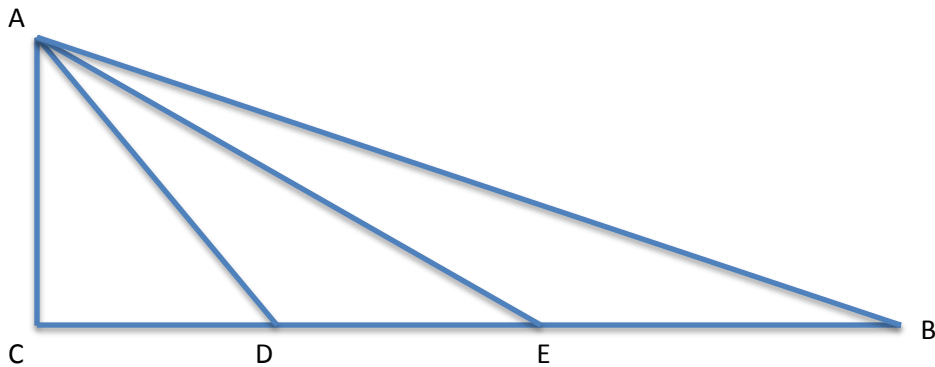
In the figure above, angle C is a right angle. The figure is not necessarily drawn to scale. CD = DE = EB = 1 unit. Let A_1 be the area of triangle ACD. Let A_2 be the area of triangle ADE and let A_3 be the area of triangle AEB.

What are the ratios $A_1 : A_2 : A_3$?

    A.   1: 1: 1
    B.   1: 2: 3
    C.   1: 1.1: 1.2
    D.   1: 1: 1.2
    E.   there is not enough information to determine the ratios

20. Tiffany starts with a $100 gift from her grandparents and for an indefinite period of time saves $8.25 per month from her allowance. Mitchell starts with a $80 gift from his grandparents and saves $9.75 per month from his allowance.   How many months will it take for Mitchell to have more money than Tiffany?

    A. 12 months
    B. 13 months
    C. 14 months
    D. 15 months
    E.   Mitchell will never have as much money as Tiffany.

21. James has 10 pounds of bird seed. He pours it into containers which hold ¾ of a pound of bird seed. How many pounds of bird seed will he have left over?

A. $\dfrac{1}{3}$ pound

B. $\dfrac{2}{3}$ pound

C. $\dfrac{1}{4}$ pound

D. $\dfrac{1}{2}$ pound

E. $\dfrac{3}{8}$ pound

22. A car got 33 miles per gallon using gasoline that cost $2.95 per gallon. Approximately what was the cost, in dollars, of the gasoline used in driving the car 350 miles?

A. $10
B. $20
C. $30
D. $40
E. $50

23. Li has a 4ft x 3ft bulletin board that he wishes to cover with 4in x 6in notecards. How many notecards will he need?

A. 84
B. 24
C. 12
D. 1/2
E. 72

24. Which of the following numbers is farthest from the number 1 on the number line?

A. -19/6
B. -5
C. 0
D. 6
E. 10/3

**ANNUAL PERCENT CHANGE IN DOLLAR AMOUNT OF SALES
AT FIVE RETAIL STORES FROM 2010 TO 2012**

Store	Percent Change from 2010 to 2011	Percent Change from 2011 to 2012
P	10	-10

25. If the dollar amount of sales at Store P was $800,000 for 2010, what was the dollar amount of sales at that store for 2012?

   A. $727,200
   B. $792,000
   C. $800,000
   D. $880,000
   E. $968,000

26. If 25 students in one class had an average of 93% and 20 students from another class had an average of 98%, approximately what is the average in percent of all 45 students?

   A. 94
   B. 97
   C. 95.5
   D. 95.2
   E. 93

27. A right rectangular prism has a length of $1\frac{3}{4}$ inches, a width of 2 inches, and a height of $3\frac{1}{4}$ inches. How many cubes with a side length of $\frac{1}{4}$ of an inch would fit in the prism?

   A. 7
   B. $11\frac{3}{8}$
   C. 728
   D. 846
   E. 56

28. What is the surface area of the square base pyramid below? Assume that all triangular faces are congruent.

12 cm

6 cm

6 cm
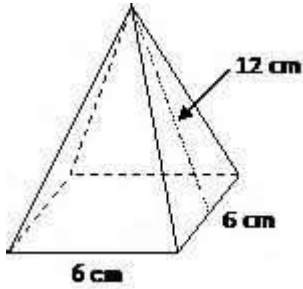
   A. 139 cubic cm
   B. 324 square cm
   C. 36 square cm
   D. 180 square cm
   E. 432 cubic cm

29. Being a conscientious driver, Suzy stayed at or below the speed limit while traveling down the interstate. Overall, she went an average rate of 65 mph and it took her 10 hours to complete her journey. If she traveled for 6 of her 10 hours at 70 mph, what constant speed did she go for the remaining 4 hours to obtain the overall 65 mph average?

   A. 65 mph
   B. 60 mph
   C. 57.5 mph
   D. 59.5 mph
   E. 62.5 mph

30.
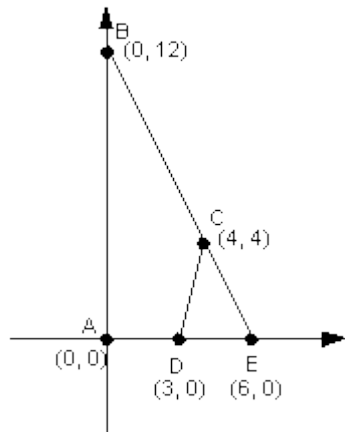
Find the area on the graph above enclosed by quadrilateral ABCD.

A. 36 u^2
B. 30 u^2
C. 42 u^2
D. 72 u^2
E. 84 u^2