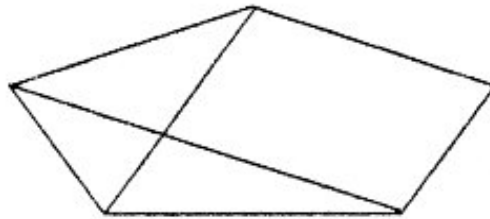


807. Mabel had a secret that nobody else knew. She told 3 of her friends. They each told 3 of their friends, each of whom told 3 of their friends. If nobody was told the secret more than once, how many people were told Mabel's secret? Note: Do not include Mabel in your count.

\_\_\_\_\_ people

808. How many different quadrilateral and triangular shapes can be found in the figure below?



\_\_\_\_\_ shapes

809. Nine more than five times a number is equal to forty-five more than twice the same number. Find the number.

\_\_\_\_\_

810. Nick has two puppies, Max and Fido.

When Nick steps on the scale holding Max, the scale reads 110 pounds.

When Nick steps on the scale holding Fido, the scale reads 107 pounds.

When Nick steps on the scale holding both puppies, the scale reads 122 pounds.

What does the scale read when Nick steps on it alone?

\_\_\_\_\_ pounds

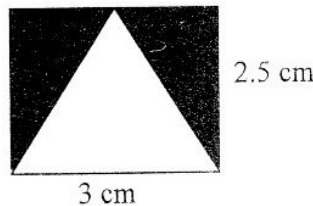
811. Three different prime numbers are multiplied together. Which one of the following statements is true?

- A. The product has exactly 3 different factors.
- B. The product has exactly 4 different factors.
- C. The product has exactly 6 different factors.
- D. The product has exactly 8 different factors.

Write the letter of the correct choice on the blank to the right.

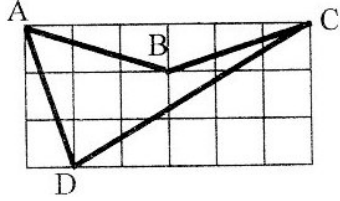
\_\_\_\_\_

812. A triangle just fits inside a rectangle as shown below. The base of the triangle is the same as the length of the rectangle. The height of the triangle is the same as the width of the rectangle. Find the area of the shaded region. Do not round your answer.



\_\_\_\_\_ square cm

813. The grid below is made of unit squares. Find the area of polygon ABCD.



\_\_\_\_\_ square units

814. The first seven numbers in a sequence are 2, 4, 6, 10, 16, 26, and 42.  
What would be the tenth number in this sequence?

\_\_\_\_\_

815. Jeremy bought a bicycle. The regular selling price was reduced by \$50, then 30% was taken off this reduced price. The final sale price of Jeremy's bicycle was \$135.10. What is the regular selling price of the bicycle? Assume no sales tax was charged.

\$ \_\_\_\_\_

816. In Olympic diving, the judging consists of seven experts who score each dive from 0 - 10. The highest and the lowest scores are tossed out and the remaining five scores are totaled. This total is multiplied by  $\frac{3}{5}$ . This result is then multiplied by the degree of difficulty of the dive. This final value is the score for the dive and is not rounded off. The degree of difficulty of Liu's first Olympic dive was **2.4**, and the seven judges' scores were **7, 7.5, 8.5, 7, 6.5, 9, and 8**.  
What score should Liu get for his first Olympic dive?

\_\_\_\_\_

817. How many seconds are in  $\frac{1}{5}$  of one day?

\_\_\_\_\_

818. Peter is thinking of a two-digit number. It is divisible by 7. Its digits are two different prime numbers. What number is Peter thinking of?

\_\_\_\_\_

819. Jenny makes wooden puzzles by cutting, sanding and painting. Each puzzle takes 1.5 hours to cut, 5 minutes to sand, and 15 minutes to paint. She makes one puzzle at a time. How many complete puzzles can Jenny make in 24 hours?

\_\_\_\_\_ puzzles

820. Tamika and Vanessa sold cups of soda pop. They charged 50 cents for a small cup of soda and 75 cents for a large cup. At the end of the day, they sold 55 cups of soda and collected a total of \$35.50. How many small cups of soda did they sell?

\_\_\_\_\_ small cups

821. William decided to weigh his baby bunnies. Flopsy and Mopsy together weighed 4.25 pounds. Peter and Flopsy together weighed 4.9 pounds. Peter and Mopsy together weighed 4.35 pounds. What was the combined weight of the three bunnies?

\_\_\_\_\_ pounds

.....  
 822. Write the expression to the right as a fraction in simplest form.

$$\frac{2 - \frac{3}{4}}{1\frac{1}{2} + \frac{7}{8}}$$

\_\_\_\_\_

.....  
 823. What number must be added to the following list of five numbers so that the mean, median and mode are equal in the new list of six numbers?

720, 750, 720, 730, 730

\_\_\_\_\_

.....  
 824. The average annual starting salary of the 53 people who recently graduated from Talk To Me University is \$82,675. One of the graduates is a professional basketball player whose starting salary is \$2.5 million a year. What is the average annual starting salary of the other 52 graduates? Round your answer to the nearest dollar.

\$ \_\_\_\_\_

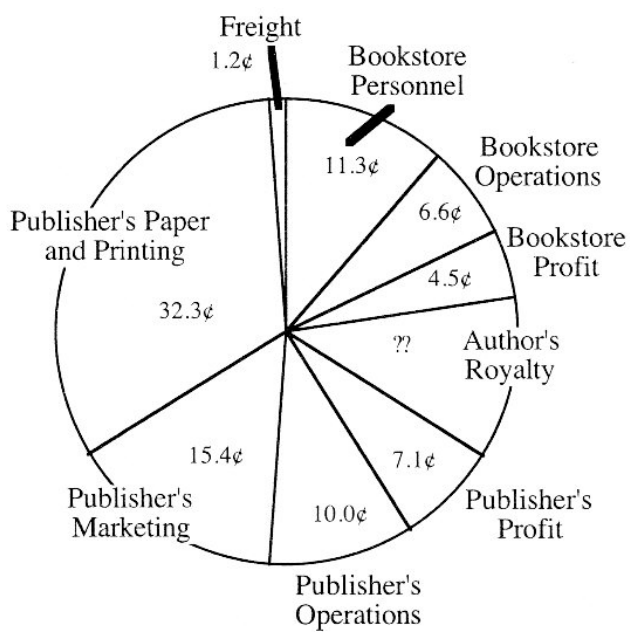
.....  
 825. A gumball machine has gumballs of 5 different flavors: cherry, strawberry, lemon, grape, and sour apple. The machine contains an equal number of gumballs of each flavor. When a quarter is put in, the machine picks two flavors at random and ejects one gumball of each flavor. What is the probability that one of the two gumballs will be cherry? Write your answer as a fraction in simplest form.

\_\_\_\_\_

.....  
 826. An ice cream parlor offers 25 different flavors. A bowl of two scoops of different flavors is called a "true double." How many different true doubles are possible?

\_\_\_\_\_ bowls

.....  
 The circle graph below shows how a typical dollar of the revenue from the sale of new textbooks is spent.



For example: The graph shows that 15.4 cents out of each dollar of revenue is spent on marketing expenses. Use the information in the graph to answer questions 827-830.

827. A new textbook sells for \$5. How much of this is spent on Publisher's Operations?

\_\_\_\_\_ cents

828. A new textbook sells for \$1. What is the Author's Royalty on each copy sold?

\_\_\_\_\_ cents

829. Each copy of Textbook for Geniuses sells for \$75. Assuming typical freight cost, how much money is paid to the freight company for transporting 1,000 copies of this book?

\$ \_\_\_\_\_

830. The Publisher's Profit on the sale of 100 copies of a book is \$355. Assuming this profit is typical, what is the selling price of each copy of this book?

\$ \_\_\_\_\_

831. A two-digit counting number is called decreasing if the units digit is less than the tens digit. For example, 54 is a *decreasing* two-digit number. How many *decreasing* two-digit numbers are there between 19 and 69?

\_\_\_\_\_

832. Some teenagers are dancing. The product of their ages is 611, 520. How many teenagers are dancing?

\_\_\_\_\_ teenagers

833. X and Y represent counting numbers in the two equations below.

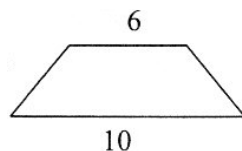
$$X + Y = 13.$$

$$X - Y = 5$$

Find the value of X.

\_\_\_\_\_

834. The formula for the area of a trapezoid is  $A = \frac{1}{2} \times (a + b) \times h$ , where a and b are the lengths of the bases and h is the height of the trapezoid. The area of the trapezoid below is 40 square units. Find its height.



\_\_\_\_\_ units

835. It takes 5 painters 5 days to paint 5 identical houses. How many days will it take 1 painter to paint 3 houses of that same kind?

\_\_\_\_\_ days

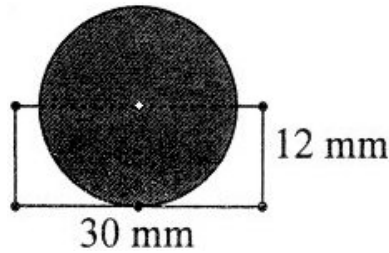
836. Jerry's uncle hired him to mow the lawn for the summer. Each week he gave Jerry 25 cents more than he did the previous week. If Jerry earned \$16 during the twelfth week, how much did he earn during the first week?

\$ \_\_\_\_\_

837. Ernie said, "My prism has 6 vertices." What is the shape of the base of Ernie's prism?

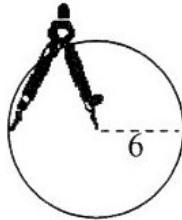
- A. triangle   B. pentagon   C. hexagon   D. octagon

838. What is the area of the two-part unshaded region in the figure below? Use 3.14 for  $\pi$  and round your answer to the nearest square mm. Note: The circle touches the bottom of the rectangle at a point. The center of the circle has been marked with a dot.



\_\_\_\_\_ square mm

839. Cecilia used a compass to draw a circle of radius 6 units. She wants to draw a larger circle that will have four times the area of this circle. What should be the radius of the larger circle?



\_\_\_\_\_ units

840. The number of bacteria in a sealed jug doubles every 5 minutes. After 40 minutes, the jar contains exactly 32,000 bacteria. How many minutes did it take for the jar to contain exactly 16,000 bacteria?

\_\_\_\_\_ minutes

841. What is the largest prime number that has a square root that is less than 11?

\_\_\_\_\_

842. A lobster's age in years is approximately his weight in pounds multiplied by 4, plus 3 years. Based on this information, how much should a 5-year old lobster weigh?

\_\_\_\_\_ pound(s)

843. After her latest basketball game, Kim noticed that she had scored  $\frac{1}{3}$  of her team's points.

LaToya scored  $\frac{1}{2}$  of the points, Jasmine  $\frac{1}{12}$ , and Melinda the remaining 6 points. How many points did Kim score?

\_\_\_\_\_ points

844. Serena Williams holds the women's world record for the fastest serve in a tennis game. Her serve was recorded at 123 miles per hour.

How fast is this in feet per second? Round your answer to the nearest foot per second.

\_\_\_\_\_ feet per second

845. I'm thinking of a decimal number.  
When I add 3.2 to this number, then divide this sum by 4, the result is 6.6.  
What number am I thinking of?

\_\_\_\_\_

846. Holly took a two-part history exam. She did not answer 2 questions on Part A.  
She did not answer 10 questions on Part B.  
She answered 85% of the exam questions.  
How many questions were on the entire exam?

\_\_\_\_\_ questions

847. The sum of a number and  $\frac{2}{3}$  of that number is 60. What is that number?

\_\_\_\_\_

848. Sarah went on a shopping trip. In the first store, she spent 50% of her money. In the second store, she spent  $\frac{2}{3}$  of what she had left. After this, she had \$6 left. How much money did Sarah take on her shopping trip?

\$ \_\_\_\_\_

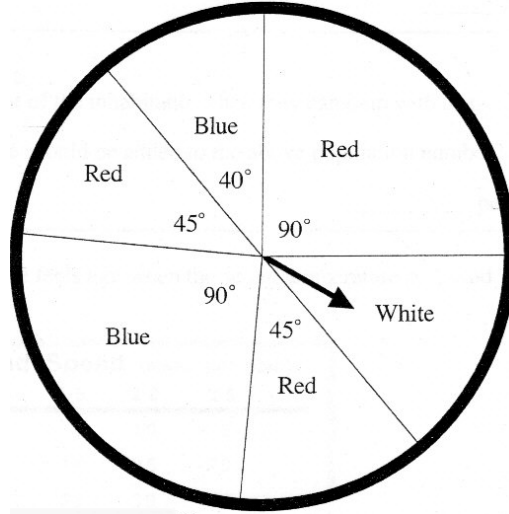
849. Jackie started with an empty piggy bank. Each day she put in a penny, a nickel, and a dime. She did this just until the money in the bank was worth an exact number of dollars. How much money did the bank contain at that time?

\$ \_\_\_\_\_

850. What number is 25% of the way from 1.42 to 3.78 on the number line? Write your answer as a decimal number.

\_\_\_\_\_

Questions 851 - 853 refer to the spinner shown here. Assume that when the arrow is spun, the probability that it will stop in a given sector is directly related to the area of that sector. If the arrow lands on the line between two adjacent sectors, it must be spun again.



851. Nadia spins the arrow once. Find the probability that the arrow will land in a sector labeled **Blue**. Write the answer as a fraction in simplest form.

\_\_\_\_\_

852. Rama spins the arrow once. Find the probability that the arrow will land in the sector labeled **White**. Write the answer as a fraction in simplest form.

\_\_\_\_\_

853. The arrow is spun 1,200 times. About how many times is the arrow expected to land in a sector labeled **Red**?

- A. 180    B. 400    C. 500    D. 600

\_\_\_\_\_

854. A bag contains 10 red and 7 white marbles, all of the same size and shape. Without looking into the bag, Talia reaches in and randomly pulls out one marble at a time. She does not replace the marbles that have been taken out of the bag. What is the smallest number of marbles she must pull out to be sure to have 2 red marbles?

\_\_\_\_\_ marble(s)

855. A bag contains 12 red balls and some green balls, all of the same size and shape. The probability of selecting a red ball at random is  $\frac{3}{5}$ . How many green balls are in the bag?

\_\_\_\_\_ green ball(s)

856. On a recent trip, Olney drove her car at 60 miles per hour (mph) for the first 5 miles. She drove at 40 mph for the next 10 miles, and then at 50 mph for the last 25 miles. What was her average speed (in miles per hour) for the entire trip?

\_\_\_\_\_ mph

857. The population of Shantytown in 1990 was 62,916. It is believed that census officials missed 2 percent of the inhabitants when they came up with this number. Assuming that this is true, how many more people should be added to the above population number?

\_\_\_\_\_ people

.....  
 The Wind chill chart below shows what the temperature feels like when the actual temperature and wind speed are known.

Temperature (degrees Fahrenheit)	Wind Speed (miles per hour)			
	10	15	20	25
20	4	5	10	15
10	-9	-18	-25	-29
0	-21	-36	-39	-44
-10	-33	-45	-53	-59
-20	-46	-58	-67	-74

For example: When the actual temperature is 10 degrees Fahrenheit (**10°F**) and the wind speed is 15 mph, the wind chill is **-18°F**; that is, it feels like the temperature is **-18°F** or 18 degrees below zero!

Use the information in the chart to answer questions 858 - 860.

858. The actual temperature is now **20°F** but the wind chill makes it feel like it is **10°F**. What is the wind speed?

\_\_\_\_\_ mph

.....  
 859. The actual temperature was a constant **-10°F** from noon to 2 p.m. yesterday. At noon the wind chill was **-33°F** and at 2 p.m. the wind chill was **-59°F**. By how much did the wind speed increase from noon to 2 p.m. yesterday?

\_\_\_\_\_ mph

.....  
 860. The meteorologist predicts that there will be a 15 miles per hour wind and a wind chill of **-18°F**. What is the meteorologist's prediction for the actual temperature?

\_\_\_\_\_ °F

.....  
 861. William has a penny, a nickel, a dime, and a quarter. He randomly selects two coins. What is the probability that the value of the two coins is at least 30 cents? Write your answer as a fraction in simplest form.

\_\_\_\_\_

.....  
 862. Five friends decided to meet for a picnic.

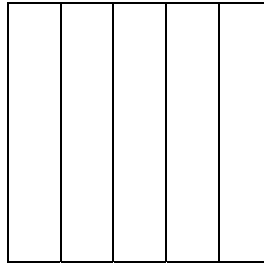
- \* They arrived at 10-minute intervals.
- \* Andy arrived 20 minutes before Jake.
- \* LaVonne and Sherman were there before Beverly arrived.
- \* Jake arrived just ahead of Sherman.

Who was the first person to arrive at the picnic?

\_\_\_\_\_



863. The square below is composed of 5 congruent rectangles. The perimeter of each rectangle is 36 cm. What is the area of the square?



\_\_\_\_\_ square cm

.....  
 864. Amanda needs to construct a cardboard box that will hold exactly 48 cubes each measuring 1 inch per side.

The height of the box must be 2 inches.

The length must be longer than the width.

Amanda wants the box to have the least possible amount of cardboard. Under these conditions, what is the length of the box Amanda should construct?

\_\_\_\_\_ inches

.....  
 865. A car loses 10% of its value every year. Magnus bought a car on January 1, 2004 for \$24,500. During what calendar year will the car be valued at \$15,000?

\_\_\_\_\_

.....  
 866. The cat kingdom is having its annual tug-of-war!

\* Three calico cats have the same pulling power as five Siamese cats.

\* Three calico cats and one Siamese cat have the same pulling power as two tiger cats.

How many Siamese cats have the same pulling power as one tiger cat?

\_\_\_\_\_ Siamese cats

.....  
 867. In the Olympic 400-meter hurdles, there is a distance of 40 meters before the first hurdle. There is a distance of 40 meters from the last hurdle to the finish line. There are 10 equally-spaced hurdles altogether. What is the distance between two consecutive hurdles? If necessary, round your answer to the nearest tenth of a meter.

\_\_\_\_\_ meters

.....  
 868. Assume it is now Sunday noon. What day of the week will it be 1 million minutes from now?

\_\_\_\_\_