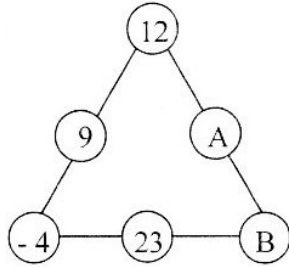


63. What is the largest counting number that could be put in the box to make the sentence true?

$$4 + 3 \times \square < 106$$

Write the number on the blank to the right.

.....
64. In the magic triangle below, the sum of the three numbers on each side is 17.
Find the value of A.



.....
65. The four children below estimated the length of a stick. Three of the estimates were close to the actual length. Which child had the estimate that was not close to the actual length?

James: about $\frac{1}{2}$ meter

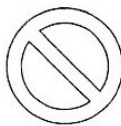
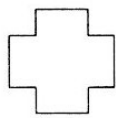
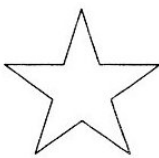
Betty: about 20 inches

Sylvia: about 50 cm

Andy: about 50 inches

Write the child's name on the blank to the right.

.....
66. How many of the shapes below have more than one line of symmetry?

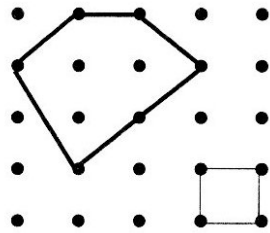


_____ shapes

.....
67. On Megan's birthday, the sun rose at 7:57 a.m. and set at 7:46 p.m. How many hours and minutes of daylight were there on Megan's birthday?

_____ hours _____ minutes

68. The square in the lower right corner of this figure has an area of one square unit. Find the area of the pentagon.

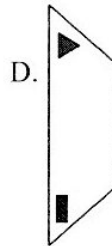
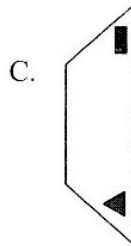
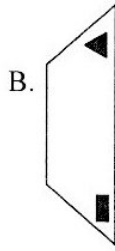
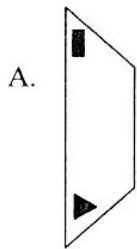
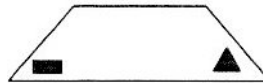


_____ square units

69. Light travels at the rate of 186,000 miles per second. Which of the following gives the best approximation of how long it will take light to travel four hundred fifty million nine hundred forty-nine thousand miles?

- A. 2,424 minutes B. 40 minutes C. 13 minutes D. 3 minutes

70. Suppose the figure at the right is rotated 270° counterclockwise about its center. Which of the figures below would show the result?



71. A recipe requires $3\frac{1}{4}$ cups of milk. Jermaine has only $1\frac{3}{8}$ cups of milk. How much more milk does he need for this recipe? Write your answer as a mixed number in simplest form.

_____ cups

72. Charles had a balance of \$619.23 in his checking account. He wrote checks for \$162.25, \$158.34, and \$33.17. He then made a deposit of \$28.00. What was Charles' checking account balance after these four transactions?

\$ _____

73. Ellen wants to buy a snack from a machine that will take only quarters, dimes, and nickels. Each snack costs 40 cents, and she must use exact change in the machine. How many different combinations of coins could Ellen use to buy a snack?

_____ combinations

74. Shawna bought a polo shirt that was on sale for 20% off of the regular selling price and a jacket that was on sale for 35% off of the regular selling price. The regular selling price of the polo shirt was \$18.50. The regular selling price of the jacket was \$26.40. There was no sales tax. How much did Shawna pay altogether for the polo shirt and the jacket?

\$ _____

75. Korby has read 153 pages of a book. He still has $\frac{1}{4}$ of the book to read. How many pages are in the book Korby is reading?

_____ pages

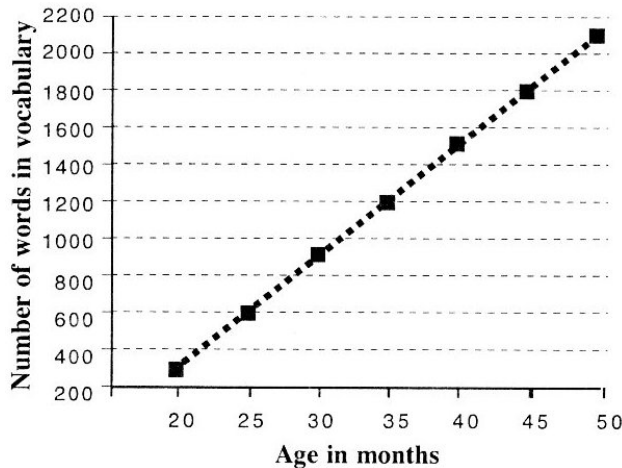
76. I am thinking of two numbers. The first number is the largest one-digit prime number. The second number is the smallest two-digit square number. What is the product of my two numbers?

77. Find 25% of $\frac{2}{7}$. Write your answer as a fraction in simplest form.

78. Pat went to the bowling alley. First he spent half of his money to pay for the games he bowled. Next he spent \$1.50 for the shoes he rented and \$3.75 at the snack bar. He had \$6.25 left. How much money did Pat take to the bowling alley?

\$ _____

The number of words in a child's vocabulary depends on the age of the child. The graph below shows how many words are in the vocabulary of the average child between the ages of 20 months and 50 months.



For example, the average child at the age of 20 months has a vocabulary of 300 words. Use the information provided in the graph to answer questions 79 - 82.

79. How many words are in the vocabulary of the average child at the age of 45 months?

_____ words

80. What is the youngest age (in months) by which the average child has a vocabulary of 900 words?

_____ months

81. By how many words does the average child's vocabulary increase in any 15-month period?

_____ words

82. Johnny is a 40 month-old child with a vocabulary of 1600 words. How many more words does Johnny have in his vocabulary than the average 40 month-old child?

_____ words

The *Know It All Encyclopedia* is sold in supermarkets one volume at a time. The first volume costs 7 cents, the second volume costs 77 cents, and the remaining 27 volumes are \$5.77 each. Use this information to answer questions 83 and 84.

83. How much does the entire set cost? Assume there is no sales tax.

\$ _____

84. Find the median price of the volumes.

\$ _____

A sign on a gasoline pump at the Fast Pump gas station reads:

MINIMUM OCTANE RATING
(R+M)/2 METHOD
89

The sign indicates that the minimum octane rating is obtained by adding two numbers, the R-value and the M-value, and dividing the sum by 2.

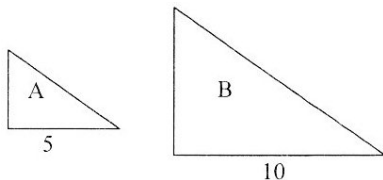
85. The sign indicates that the minimum octane rating of this gasoline is 89. If the R-value for this gasoline is 87, find the M-value.

M-value= _____

86. Jim's motor requires a special gasoline. It must have a minimum octane rating of 94. The M-value must be exactly 6 less than the R-value. Use the (R+M)/2 method to find the R-value of the gasoline required in Jim's motor.

R-value= _____

87. Triangle A is similar to triangle B. Triangle B has an area of 40 square units. Find the area of triangle A.



_____ square units

88. Jenna has 10 feet of rope. Which of the following is the best estimate of the length of this rope?

- A. $2\frac{3}{4}$ meters
- B. 3 meters
- C. $3\frac{1}{2}$ meters
- D. 4 meters

89. The sum of all nine numbers in the square below is 19. What number must A represent?

18	7	A
-6	5	-8
11	9	-7

90. Two standard dice are rolled and the resulting numbers are multiplied together. What percent of the time will the product be an odd number?

_____ %

91. Highway 25 runs north and south through Maple City, Benton, Oakville, and Jordan City. Maple City is 82 miles north of Jordan City. Oakville is 56 miles south of Jordan City. Benton is halfway between Maple City and Oakville. What is the distance between Benton and Jordan City?

_____ miles

92. In the problems below, ☆, △, and ◇ represent different counting numbers. Each symbol represents the same number in all problems.

$\star + \diamond = 29.$
 $\diamond \times \diamond = 289.$
 $\triangle \div \star = 23.$

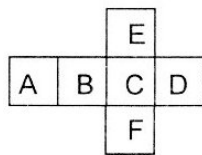
Find the value of △.

93. Mary picked four counting numbers and added them together. She divided the sum by 2, and got a remainder of 1. Which one of the following statements could be true about the four numbers Mary picked?

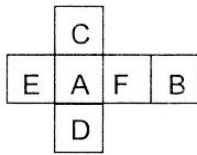
- A. All of the numbers were even.
- B. Exactly two of the numbers were even.
- C. One number was even and the other three were odd.
- D. All of the numbers were odd.

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

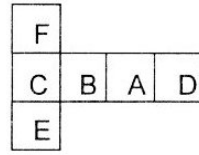
94. When the four patterns below are folded into cubes, three of the cubes will have the same pairs of letters opposite each other. One of the cubes will be different. Which pattern will make a cube that is different?



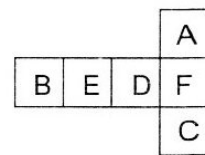
Pattern 1



Pattern 2



Pattern 3



Pattern 4

Pattern _____

95. 8 marbles, 22 screws, and 1 nail are put on one side of a balance scale.
 12 marbles, 6 screws, and 1 nail are put on the other side of the balance scale.

The scale balances.

Note: All of the marbles are identical. All of the screws are identical. Both nails are identical.

Use this information to find out how many screws would balance 18 marbles.

_____ screws

96. A plane is traveling at a speed of one-half mile every 4 seconds. How many miles will this plane travel in $2\frac{1}{2}$ hours?

_____ miles

97. Tesia is a contestant on a television game show. She will win the dollar value of any question she answers correctly. There are four questions for Tesia to answer. Each question answered correctly is valued at \$400 more than the previous question. The fourth question is valued at \$2000. How much will Tesia win altogether for answering all four questions correctly?

\$_____

98. Melissa brought 29 pieces of fruit to the picnic. She brought only apples, pears, and bananas. There were half as many apples as bananas and 1 more pear than apples. How many apples did Melissa bring to the picnic?

_____ apples

99. What number is halfway between 4.683 and 5.219 on the real number line?

100. Tyrell bought a radio with his birthday money. After a sales tax of 6% was added to the price of the radio, the final cost was \$46.11. What was the cost of the radio before sales tax was added?

\$_____

101. Simplify: $\frac{3}{4} + \frac{1}{4} \div \frac{1}{2} - \frac{7}{16}$

Write your answer as a fraction in simplest form.

.....
102. Ali constructed a rectangle that measures 8 cm long and 6 cm wide. Jayna's rectangle has a length that is 50% longer and a width that is 50% shorter than Ali's. Find the area of Jayna's rectangle.

_____ cm²

.....
103. Zack has a favorite two-digit number. The number is a multiple of 6. If he subtracts 1 from his number, the result is a multiple of 5. His number is not a multiple of 4. What is Zack's favorite two-digit number?

.....
104. The perimeter of a U.S. ten-dollar bill is 17.5 inches. The width of the bill is 6.18 inches. What is the length of the U.S. ten-dollar bill? Do not round your answer.

_____ inches

.....
105. Jake is making a list of numbers with this rule: After the first number, each number is 25% smaller than the number that comes before it. The first four numbers in Jake's list are shown below.

5.12 3.84 2.88 2.16

Find the difference of the fifth and sixth numbers in Jake's list. Do not round your answer.

.....
106. Carlos bought a pair of jeans on sale. The regular price of the jeans was \$28.00. The regular price was first reduced by 20%, and then this sale price was reduced by 30%. After these two reductions in price, what did Carlos pay for the jeans? Assume there is no sales tax.

\$ _____

.....
The Write Right brand of marker pens comes in two basic types (permanent and non-permanent). Customers may choose from four colors (red, green, brown, and blue), and three writing styles (fine, medium, and bold). This means that the marker pens vary according to type, color, and writing style. Use this information to answer questions 107 - 109.

107. How many different kinds of Write Right brand of marker pens are available altogether?

.....
108. How many different kinds of Write Right brand of marker pens have a bold writing style?

.....
109. A box contains one of each kind of Write Right marker pens. Pancho randomly selects one marker pen from the box. What is the probability that his pen is red and non-permanent? Write your answer as a fraction in simplest form.

.....
A roulette wheel has 38 compartments. Two of these are numbered 0 and 00 and are green. The other compartments are numbered 1 through 36, of which half are red and half are black. When the wheel is spun in one direction, a small ivory ball is rolled in the opposite direction along its rim. Assume that the ball is equally likely to fall into any one of the compartments. Use this information to answer questions 110 and 111.

110. Find the probability that the ball falls into a compartment with an odd number. Write your answer as a fraction in simplest form.

111. A winning bet occurs when the ball falls into a compartment with a number the contestant has chosen. A contestant may bet on more than one number for any spin of the wheel. On one spin of the wheel, Mary bets on the numbers 5, 10, 15, ..., 35. Find the probability that Mary will win. Write your answer as a fraction in simplest form.

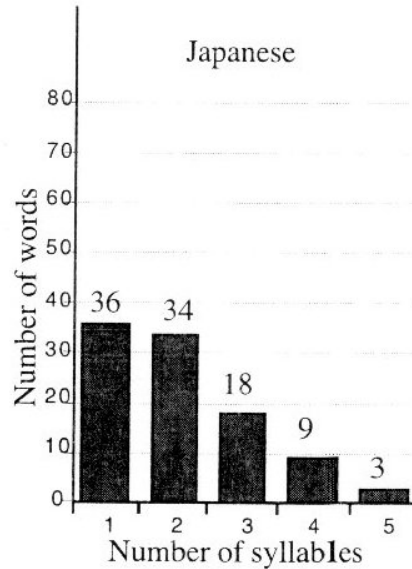
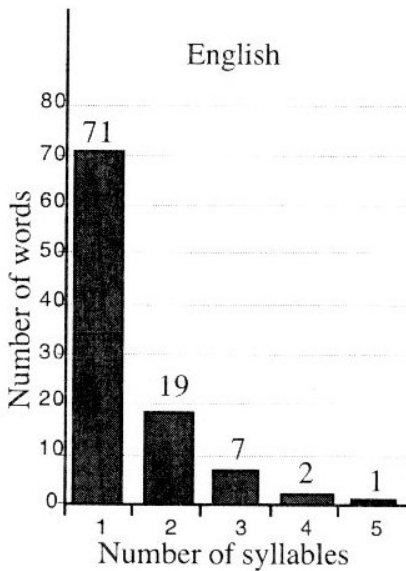
112. Eight of Uncle Seymour's friends and family decided to throw him a surprise birthday party. The mean age of the first seven people to arrive is 28 years. Aunt Betsy, the eighth person to arrive, is 52 years old. What does the mean age become after she joins the party?

_____ years

113. When Uncle Seymour joins the party, the mean age of the entire group of nine people becomes 35 years. How old is Uncle Seymour?

_____ years

One way in which languages differ is the number of syllables in their words. Facts: The word "book" has one syllable and the word "bookshelf" has two syllables. The bar graphs below show the frequencies of the number of syllables per word in English and Japanese.



Note: The information in each graph is based on a sample of 100 words in each language.

Use the information in the graphs to answer questions 114-116.

114. The bar graph for English shows that in a sample of 100 words, 71 have one syllable each. What percent of words in Japanese have exactly one syllable each?

_____ percent

115. Find the mean number of syllables per word in English. Do not round your answer.

_____ syllable(s)

.....
 116. Emma studied the bar graph for Japanese. She discovered that if a typical sample of 100 words is sorted according to the number of syllables, the median number of syllables would be 2. What is the median number of syllables per word in English?

_____ syllable(s)

.....
 117. There are 12 girls and 16 boys in Mr. Smith's class. Which other class has the same ratio of girls to boys?

Class A: 10 girls and 14 boys

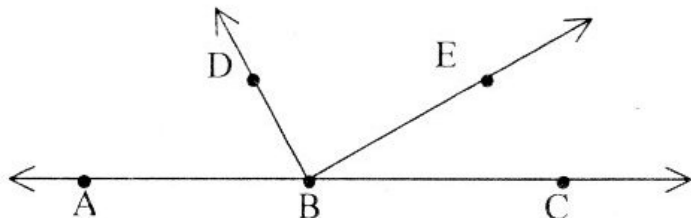
Class B: 11 girls and 15 boys

Class C: 9 girls and 12 boys

Class D: 24 girls and 30 boys

Class _____

.....
 118. B is a point on line AC. $\angle EBC$ measures 33° . $\angle DBA$ measures 58° .

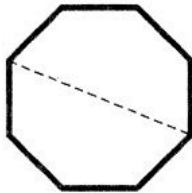


$\angle DBE$ is:

- A. an acute angle. B. an obtuse angle. C. a reflex angle. D. a right angle.

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

.....
 119. The diagonal of a polygon is a line segment that connects two vertices. The vertices cannot be next to one another. The dotted line segment in the octagon below shows one diagonal of the octagon. How many diagonals does the octagon have?



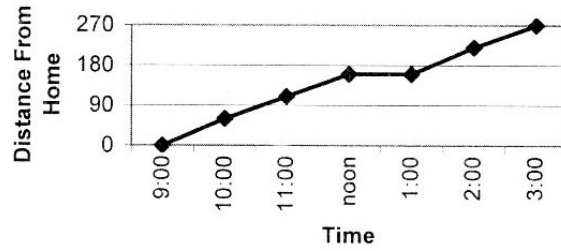
_____ diagonal(s)

.....
 120. Sue and Luis are each reading copies of the same book. The book has 440 pages. Sue has read 60% of the book. Luis has read $\frac{3}{8}$ of the book. How many more pages has Sue read than Luis?

_____ pages

121. Courtney's family drove to Grandma's house. They left home at 9 a.m. and arrived at Grandma's house at 3 p.m. that same day. The graph below describes their drive.

Driving To Grandma's House

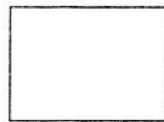


Which one of the following statements is not true, based upon the graph above?

- A. Grandma's house is 270 miles from their home.
- B. They took one rest stop on the way to Grandma's house.
- C. It took about 3 hours to drive the first 100 miles.
- D. It took 6 hours to get to Grandma's house.

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

122. The perimeter of a rectangle is 49 cm and the length is 13 cm. Find the area of the rectangle.



13 cm

_____ square cm

123. Bree studied two and one-half times as long as Eli for their geography test. Lucas studied for 50 minutes which was 8 minutes more than Eli studied.

How many more minutes did Bree study than Eli?

_____ minutes

124. A faucet leaks $3\frac{1}{4}$ cups of water every day. How many quarts of water will the faucet leak in 48 days?

_____ quarts