

2007

1). Julius Caesar wrote the Roman Numerals I, II, III, IV, and V in a certain order from left to right. He wrote I before III but after IV. He wrote II after IV but before I. He wrote V after II but before III. If V was not the third numeral, in what order did Caesar write the numerals from left to right?

2). The age of a man is the same as his wife's age with the digits reversed. The sum of their ages is 99 and the man is 9 years older than his wife. How old is the man?

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3). If 24 gallons of water are poured into an empty tank, then $\frac{3}{4}$ of the tank is filled. How many gallons does a full tank hold?

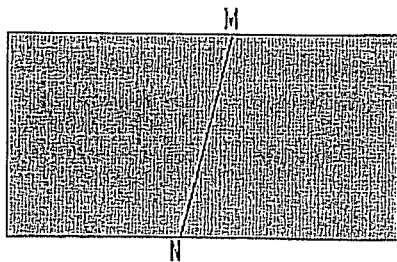
4). Rectangular cards, 2 inches by 3 inches, are cut from a rectangular sheet 2 feet by 3 feet. What is the greatest number of cards that can be cut from the sheet? 2007

5). A motorist made a 60-mile trip averaging 20 miles per hour. On the return trip, he averaged 30 miles per hour. What was the motorists average speed for the entire trip?

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6). In the rectangle below, line segment MN separates the rectangle into 2 sections. What is the largest number of sections into which the rectangle can be separated when 4 line segments are drawn through the rectangle?

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7). Suppose today is Tuesday. What day of the week will it be in 100 days from now?

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8). If a number is divided by 3 or 5, the remainder is 1. If it is divided by 7, there is no remainder. What number between 1 and 100 satisfies the above conditions?

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9). Amy can mow 600 square yards of grass in $1\frac{1}{2}$ hours. At this rate, how many minutes would it take her to mow 600 square feet?

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10). 546 is one of six three-digit numbers each of which is different and has the digits 4, 5, and 6. What is the sum of these six numbers?

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11). A slow clock loses 3 minutes every hour. Suppose the slow clock and a correct clock both show the correct time at 9:00 a.m. What time will the slow clock show when the correct clock shows 10 o'clock the evening of the same day?

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12). In a math contest of 10 problems, 5 points was given for each correct answer and 2 points was deducted for each incorrect answer. If Nancy answered all 10 problems and scored 29 points, how many correct answers did she have?

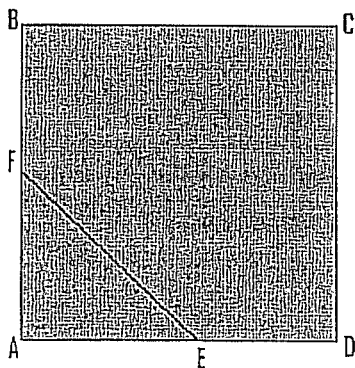
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13). A fisherman sold some big fish at \$4 each and twice as many small fish at \$1 each. He received a total of \$72 for the big and small fish. How many big fish did he sell?

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14). ABCD is a square, and E and F are midpoints of sides AD and AB respectively as shown. What fractional part of the total area of the square is the area of triangle AEF?

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15). What is the greatest number of points of intersection that can occur when 2 different circles and 2 different straight lines are drawn on the same piece of paper?

16). Suppose the counting numbers from 1 through 100 are written on paper. What is the total number of 3s and 8s that will appear on the paper?

Answers: Math team 2007

1). IV, II, I, V, III

2). 54

3). 32

4). 144

5). 24 mph

6). 11

7). Thursday

8). 91

9). 10 minutes

10). 3330

11). 9:21 pm

12). 7

13). 12

14). $\frac{1}{8}$

15). 11

16). 40