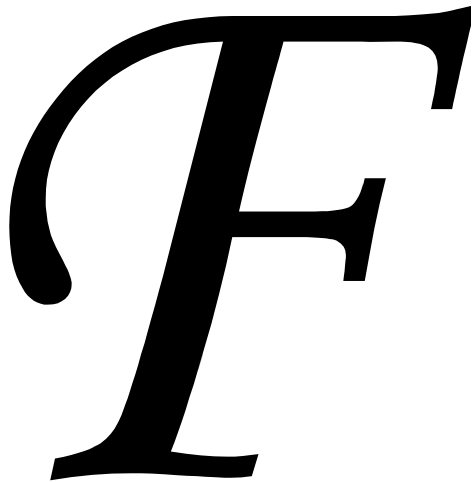


*REMT 2004*

*ANSWERS*



*MATHEMATICAL*

*THOUGHT*

1. \_\_\_\_\_
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LAST NAME

FIRST NAME

GRADE

1. What is the largest prime factor of 7425?
2. What is the smallest integer greater than 1 that is both a perfect square and a perfect cube?
3. If there are 231 cubic inches in a gallon, how many gallons of water are there in a pool that is 7 feet wide, 22 feet long, and 5 feet deep?
4. Three children divided a box of cookies. One child got half the cookies, another child got one-third of the cookies, and the third child got eight cookies. How many cookies were in the box altogether?
5. Pat has 6 shirts, 3 pairs of slacks, and 2 vests. How many different three-piece outfits can Pat wear?

6. A standard biscuit recipe requires flour and milk in the ratio 5 to 2. How many cups of milk should be used along with 8 cups of flour?
  
  
  
  
  
  
  
  
  
  
7. In a group of 40 students, 25 are taking Spanish and 22 are taking History, while 15 are in both of these classes. How many of these 40 students are taking neither Spanish nor History?
  
  
  
  
  
  
  
  
  
  
8. A dollar bill is  $6\frac{3}{16}$  inches long. There are 12 inches in a foot and 5,280 feet in a mile. If a million dollar bills are laid end to end, how far, to the nearest mile, will they reach?
  
  
  
  
  
  
  
  
  
  
9. I programmed my computer to print out all of the integers from 1 to 1000. How many times did the digit 7 get printed?
  
  
  
  
  
  
  
  
  
  
10. A mysterious old house has seven rooms. Each room is connected to every other room by a secret passageway. If each passageway leads only to the two rooms that it directly connects, how many such secret passageways must there be?

11. A box of chocolate candy contains four pieces--two with cream centers and two with caramel centers. If I select two pieces of candy at random, what is the probability that I will get one of each?
  
  
  
  
  
  
  
  
  
  
12. What is the smallest positive number that leaves a remainder of 1 when it is divided by 2, a remainder of 2 when it is divided by 3, and a remainder of 3 when it is divided by 4?
  
  
  
  
  
  
  
  
  
  
13. The probability of rolling a sum of 5 with two dice is  $\frac{4}{36}$ . The probability of rolling 6 is  $\frac{5}{36}$ , and the probability of rolling 7 is  $\frac{6}{36}$ . What is the probability of rolling a sum of 8 with two dice?
  
  
  
  
  
  
  
  
  
  
14. A truncated octahedron is a solid figure having 8 hexagonal faces and 6 square faces. Since each edge belongs to two faces, the number of edges is  $\frac{1}{2} \times (8 \times 6 + 6 \times 4) = 36$ . How many vertices does it have?
  
  
  
  
  
  
  
  
  
  
15. The parking lot at the local playground is filled with bicycles and tricycles. If the lot has 70 wheels and 58 pedals, how many tricycles are there?