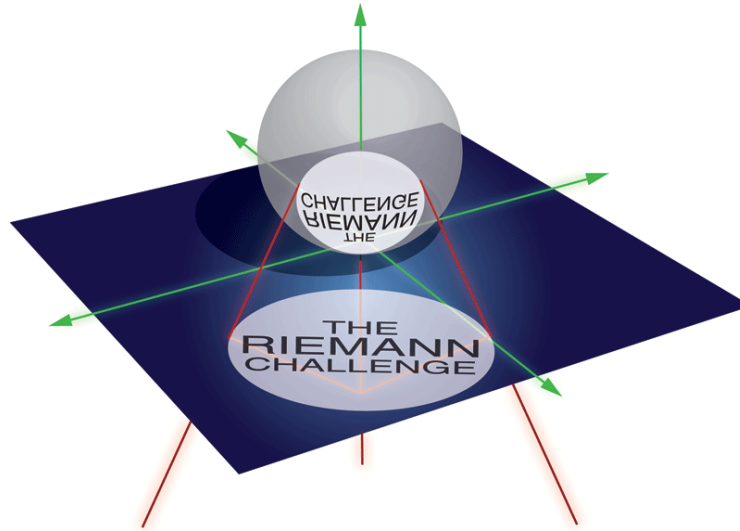


“The Gatech grad and the Harvard lawyer”



Two old friends meet at a bar. One of them is an engineer who graduated from Georgia Tech, and the other is a lawyer from Harvard Law School. The lawyer always loves to challenge his good friend, the engineer. After considerable conversation about life's ups and downs over several beers, the lawyer noticed his opening to issue his latest challenge. He begins by saying that he has become an enthusiast of remote-controlled model airplanes, and that he now has three prized airplanes in his collection, and each one is of different design.

He asks the Tech graduate: "Do you think that you can tell me the wingspan of each of my airplanes?"

"Sure," answers the Georgia Tech graduate, who is always up for a challenge from his friend, "but you must tell me something about your planes."

"OK," says the lawyer, "I will give you some hints. I will tell you that the product of the wingspans of my airplanes, each measured in inches, is 100."

"All right," says the Georgia Tech grad, "that is a start, but I will need more than just that."

The lawyer had a feeling that this was coming, so he immediately replied with, "The airplane with the longest wing extent has a wingspan, measured in inches, that equals the number of different kinds of beer the bartender has in his refrigerator." He points to the relatively large cooler in the back.

The Tech grad thinks for some time and then replies, "I need another hint to solve your puzzle."

The lawyer rolls his eyes and replies, "The airplane with the smallest wingspan is not a Curtiss P-40 Warhawk, but this my last clue you will receive"

The Georgia Tech graduate thanks his friend, and says, "This is sufficient." He then proceeds to give his friend the correct answer.

The Riemann challenge is for you to do the same: follow the reasoning of the Georgia Tech graduate, and solve the puzzle!

Be the first to solve the Riemann challenge problem correctly, and email your solution to Dr. Fedele (ffedele3@gtsav.gatech.edu) by Wednesday, Feb 18. *Good Luck !*

Rules and more:

http://www.gtsav.gatech.edu/people/ffedele/Research/riemann_challenge/index.html

Sincerely, the Riemann challengers

THE SOLUTION

The logic is as follows: From the first clue: "... *I will tell you that the product of the wingspans of my airplanes, each measured in inches, is 100.*", The GATECH grad, who is an engineer, immediately think simple: He considers all the possible integer sets that multiply to 100. These sets are the following triplets:

(1,1,100)

(1,2,50)

(1,4,25)

(1,5,20)

(1,10,10)

(2,2,25)

(2,5,10)

(4,5,5)

The second clue "*The airplane with the longest wing extent has a wingspan, measured in inches, that equals the number of different kinds of beer the bartender has in his refrigerator.*" implies that there is a single plane with the largest wingspan. This eliminates the two triplets (1,10,10) and (4,5,5). Further, the engineer is able to count the number of unique beers in the refrigerator. His response - that he requires more information - implies that the number he counted appears as the largest number in more than one of the remaining sets. This eliminates (1,1,100), (1,2,50), (1,5,20), and (2,5,10). We are left with the two triplets (1,4,25) and (2,2,25).

The last clue "*The airplane with the smallest wingspan is not a Curtiss P-40 Warhawk*" implies that there is a single plane with the smallest wingspan. Thus (2,2,25) is eliminated and our solution is (1,4,25).