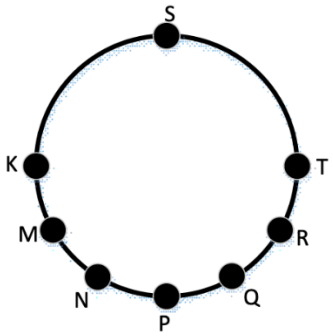
1. Terence Tao's running speed is 3 times as much as Diocles'. Both of them start running from point S, at the same time, but in the opposite direction.



Tao is running in anticlockwise direction. At which point will they meet?

Answer

2. There are 6 red points (denoted by $R_1, R_2, R_3, R_4, R_5, R_6$) and 6 white points (denoted by $W_1, W_2, W_3, W_4, W_5, W_6$)
Each red point is connected to at least one white point. Each white point is connected to at least one red point.
The number of red points connected to W_1, W_2, W_3, W_4, W_5 are 4, 3, 2, 2, 1, respectively.
The number of white points connected to R_1, R_2, R_3, R_4, R_5 are 5, 4, 3, 2, 2 respectively.
How many white points are connected to R_6?

Answer

3. Joan Clarke wants to tile her 3 units × 4 units room with six 1 × 2 tiles. In how many different ways can she arrange the tiles?

Answer

4. How many pairs of numbers (m, n) satisfy the conditions that GCD $(m, n) = 1$, $m \times n = 300$ and $m > n$?

Answer

5. A problem is categorized as difficult if it can be solved only by one student; mediocre, if exactly two students are able to solve it; easy, if three students can solve it. Ada Lovelace, Emmy Noether, and Sofia Kovalevskaya together solved 100 problems. Each of them solved exactly 60 problems. What is the difference between the number of difficult problems and easy problems?

Answer

Answer Key

1.	T
2.	1
3.	11
4.	4
5.	20