共 6 大題。總分 100 分。

(1) 【10 points】 Use Venn diagram to show probability $P(A|B) = P(A \cap B) / P(B)$.

(2) 【15 points】 Finite sets A and B have $|A|=m$ and $|B|=n$. What is the numbers of onto functions from A to B?

(3) 【15 points】 How many arrangements of the letters in ESOESETALLAHA have no adjacent E's?

(4) 【20 points】 Prove: Triangle ACE is equilateral with AC=1. If five points are selected from the interior of the triangle, there are at least two whose distance apart is less than 1/2.

(5) 【20 points】 Determine the number of min-length staircase paths from (2,1,4) to (7,4,8).

(6) 【20 points】 The probability that our team can win any tournament is 3/5. Suppose we need to play eight tournaments. What is the probability that our team can win exactly five of the eight?

試題隨卷繳回