Napkins Puzzle's Generalisations

Abstract

When we go to a Chinese restaurant, we notice that the circular table is covered by a larger square napkin. Some part of the napkin, therefore, droops down. That caught us thinking: how to cover tables using different kinds of napkins so that we can utilise the napkins most effectively? (i.e. maximise the area of a given-shaped table that can be completely covered using a limited amount of specific napkins without cutting them) Therefore, we surfed the Internet and found that there is a similar problem, called the Napkins Puzzle. Unfortunately, it only involves using three square napkins and a square table. Therefore, we will generalise the solution by using different shapes or sizes of napkins or tables.

Content

7 Direction of further investigation

We changed the shapes and sizes of the table and the napkins, but we can change other factors too, like allowing a few cuts. Also, we try to find the largest area of the table that can be covered, but we can also find the way of putting the napkins such that the overlapping area or the area which droops down are minimum or maximum. In addition, we can prove or disprove our hypothesis next time.

8 References

The proof of the original napkins problem: https://datagenetics.com/blog/february62021/index.html