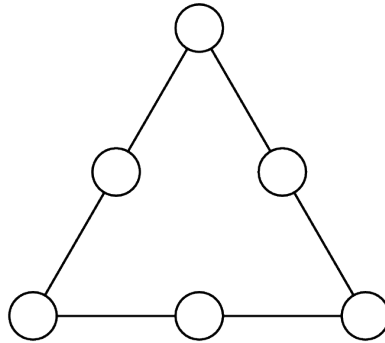
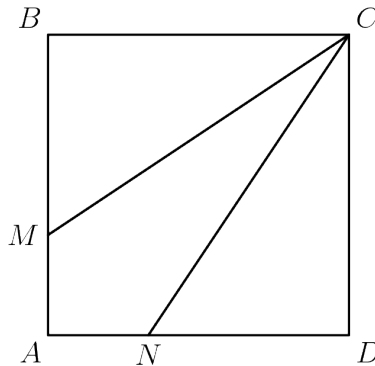


**MATH 7: HANDOUT 10**  
**MATH BATTLE I**

1. There are 10 students in a class and they are given an exam with 10 problems in it. Each student solves a different number of problems and a total of 50 problems are solved by all students together. John solved problems 1-5. Did he also solve some other problem?
2. A  $179 \times 57$  rectangle is divided into  $1 \times 1$  squares. If we draw a diagonal in this rectangle, how many squares will it intersect?
3. One line divides a plane into 2 areas. Two lines can divide plane into 4 areas. What is the minimal number of lines to divide a plane into 50 areas?
4. If numbers 10 – 15 are placed on the sides of the triangle so that each side adds up to the same number, what is the largest sum each side can have?



5. In a square with the side 3,  $CM$  and  $CN$  divide its area into 3 equal parts. What is the length of  $CM$ ?



- \*6. An explorer, traveling by car, needs to cross a 750 mile wide desert. Unfortunately, his car can only carry enough gas for 500 miles. He has unlimited supply of gas on one side of the desert, and he can make storage deposits in the desert, bringing the gas there to be used later. Can you find a way for him to cross the desert? How many miles will he have to travel?