2-1.     What is the largest possible value of $(x^2 - 2x - 1)^3 + (1 + 2x - x^2)^3$?

2-2.     Two vertices of a square are at $(3, 0)$ and $(5, 0)$.  The other vertices lie in the first quadrant. What is the slope of the line through the origin that splits the square into two regions of equal area?

2-3.    So far this year, the number of kilometers I have flown equals the sum of two consecutive integers whose squares differ by 2021.  How many kilometers have I flown so far this year?

2-4.    The "double Y," whose six angles are all congruent, and whose 4 non-vertical segments are congruent, is the shortest network that connects all 4 vertices of a square.  If the length of each side of a square is 2, the total length of its "double Y" network is $a + b\sqrt{c}$, where $a, b$, and $c$ are positive integers such that $c$ is not divisible by the square of any prime.  What is the ordered triple $(a, b, c)$?
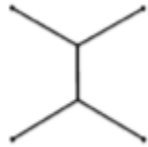
2-5.   $N$ is a 5-digit whole number.  The 6-digit number $N1$, formed by placing the digit 1 after $N$, is 3 times as large as the 6-digit number $1N$, formed by placing the 1 before $N$.  What is the 5-digit number $N$?

2-6.   The number 1 can be written as a sum of $n$ positive numbers (not necessarily distinct), each of which has a decimal representation that consists entirely of 8's, or entirely of 0's and 8's.  What is the least possible value of $n$?