

Huddle 2001

1. The equation $x^2 - 14x + 3 = 0$ has solutions r and s . Compute and simplify $1/r + 1/s$.
2. How many ways are there to arrange the letters in the word BADGER so that BAD does not appear in the arrangement? For example, we count the arrangements BAEDRG and BDAEGR, but not EGBADR.
3. Find the three-digit integer such that interchanging the first two digits reduces the number by 270, interchanging the last two digits increases the number by 18, and the sum of the digits is a multiple of 7.
4. Points A, B, C, D in space do not all lie on the same plane. How many planes in space are the same distance from each of these 4 points?