1. 2016 non-empty bags contain candy bars, and no two bags contain the same number of candy bars. What is smallest possible total number of candy bars?

2. If $x + y = xy = 3$, what is $x^2 + y^2$?

3. The ten Big XII mascots agreed to share a block of hotel rooms during a tournament, and to split the costs equally. But the Longhorn decided to stay somewhere else at the last minute, and everybody else had to pay an extra $22.40 to cover his share of the bill. What was the total cost of the block of rooms?

4. A robot starts at the origin in the Euclidean plane, and wishes to reach the point $(8, 4)$ by only taking unit-length steps directly up or to to the right. How many such paths are there that the robot could take from the origin to $(8, 4)$?

5. Say that a positive integer N is *nice* if it satisfies two properties:

- All its digits are nonzero.
- The integer M created by moving the rightmost digit of N to its far left satisfies $2M = 3N$.

  The smallest nice integer is $N = 285714$ (so $M = 428571$, and indeed $2M = 3N = 857142$).

Find another nice integer.