1. [3] Let \( f(x) = x^3 + ax^2 + bx + c \) have solutions that are distinct negative integers. If \( a + b + c = 2014 \), find \( c \).

2. [3] What is the last digit of \( 17^{17^{17^{17}}} \)?

3. [4] Find the 3-digit positive integer that has the most divisors.

4. [4] Find the number of fractions in the following list that is in its lowest form. (ie. for \( \frac{p}{q} \), \( \gcd(p, q) = 1 \).

\[ \frac{1}{2014} \quad \frac{2}{2013} \quad \ldots \quad \frac{1007}{1008} \]

5. [5] Find the sum of all positive integer \( x \) such that \( 3 \times 2^x = n^2 - 1 \) for some positive integer \( n \).

6. [6] Given \( S = \{2, 5, 8, 11, 14, 17, 20\ldots\} \). Given that one can choose \( n \) different numbers from \( S \), \( \{A_1, A_2, \ldots, A_n\} \), s.t. \( \sum_{i=1}^{n} \frac{1}{A_i} = 1 \). Find the minimum possible value of \( n \).

7. [7] How many permutations \( p(n) \) of \( \{1, 2, 3\ldots35\} \) satisfy \( a|b \) implies \( p(a)|p(b) \)?

8. [8] Find the number of positive integers \( n \leq 2014 \) such that there exists integer \( x \) that satisfies the condition that \( \frac{x + n}{x - n} \) is an odd perfect square.