

Name:

Date:

Easy

Problem 1.

Prime factorize 1343.

Solution.

Problem 2.

Find the sum of all interior angle of a regular polygon with 100 sides.

Solution.

Moderate**Problem 3.**

Compute the sum:

$$2 - 4 + 6 - 8 + \cdots - 1000.$$

Solution.

Problem 4.

Minha, Diana, Isabel, John, and Mr. Jian are at a party. Each attendance is asked to shake hands with other peers in the party. How many handshakes are there?

Solution.

Challenging

Problem 5.

Prove that an interior angle of a regular n^{th} polygon is $\frac{180^\circ(n-2)}{n}$.

Solution.

Problem 6.

Find the explicit formula for the number of factors of all numbers in the form of $p_1^{a_1} p_2^{a_2} p_3^{a_3}$ where p_1, p_2, p_3 are prime numbers and a_1, a_2, a_3 are positive integers.

Solution.