

Name:

Date:

## Easy

### Problem 1.

Prime factorize 4199.

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**Solution.**

### Problem 2.

Find the sum of all natural numbers from 1 to 1000.

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**Solution.**

**Moderate****Problem 3.**

Compute the sum:

$$5 - 10 + 15 - 20 + \cdots - 1000.$$

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**Solution.**

**Problem 4.**

How many factors does 4199 have?

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**Solution.**

## Challenging

### Problem 5.

Prove that  $100^{10} = 2^{20} \cdot 5^{20}$ .

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**Solution.**

### Problem 6.

Explain and prove Pythagorean Theorem in your own word.

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**Solution.**