Programming Problem: nth Roots & Trigonometry in Triangles
Bài Tập Lập Trình: Căn Bậc n & Lượng Giác trong Tam Giác

1 Root

Bài toán 1 (Root – Căn)**.**

2 Trigonometry in Right Triangles

"A *right triangle* (American English) or *right-angled triangle* (British English), or more formally an *orthogonal triangle*, formerly called a *rectangled triangle* is a triangle in which 1 angle is a right angle (i.e., a 90° angle), i.e., in which 2 sides are perpendicular. The relation between the sides & other angles of the right triangle is the basis for trigonometry."

"The side opposite to the right angle is called the *hypotenuse*. The sides adjacent to the right angle are called *legs* (or *catheti*, singular: cathetus)." – Wikipedia/right triangle

Given a right triangle ΔABC with $\widehat{A} = 90°$. Define $a \coloneqq BC$, $b \coloneqq CA$, $c \coloneqq AB$. Side b is the side *adjacent to angle* C & *opposed to angle* B, while side c may be identified as the side *adjacent to angle* B & opposed to (or *opposite*) angle C.

2.1 Pythagorean Triple

Problem 1 (Pythagorean triple)**.** *If the lengths of all 3 sides of a right triangle are integers, the triangle is said to be a* Pythagorean triangle *& its side lengths are collectively known as a Pythagorean triple. (a) Write* Pascal, Python, C/C++ *programs to check if 3 integers* a, b, c *input from the keyboard are Pythagorean triple or not.*

2.2 Solve Right Triangle

Bài toán 2 (Solve right triangle – Giải tam giác vuông)**.**

3 Trigonometry in Triangles

Tổng quát hơn cho tam giác (không suy biến) bất kỳ (i.e., tam giác nhọn, vuông, tù).

3.1 Solve Triangle

Bài toán 3 (Solve triangle – Giải tam giác)**.**