Homework 1: Basics

Drill Problem #1

Function Name: rectangleMath

Inputs:

1. (*double*) The width of a rectangle.
2. (*double)* The height of a rectangle.

Outputs:

1. (*double*) The area of the rectangle.
2. (*double*) The perimeter of the rectangle.

Function Description:

Write a MATLAB function that takes in the width and height of a rectangle, and outputs the area and perimeter of that rectangle. Since geometry is not a pre-req for 1371, here are the formulas for both:

$$area = width * height$$

$$perimeter = 2(width + height)$$

Homework 1: Basics

Drill Problem #2

Function Name: backCalculate

Inputs:

1. (*double*) The length of “Side A” of a right triangle.
2. (*double)* The length of the Hypotenuse of the same right triangle.

Outputs:

1. (*double*) The length of “Side B” of the same right triangle.

Function Description:

For the most part, the Pythagorean theorem is used to calculate the hypotenuse of right triangle given the lengths of sides A and B, and it is given by:

$$(Side\ A)^2 + (Side\ B)^2 = Hypotenuse^2$$

Write a MATLAB function to instead back-calculate the length of side B of a right triangle given the lengths of side A and the hypotenuse. You will have to do some simple algebraic manipulation.