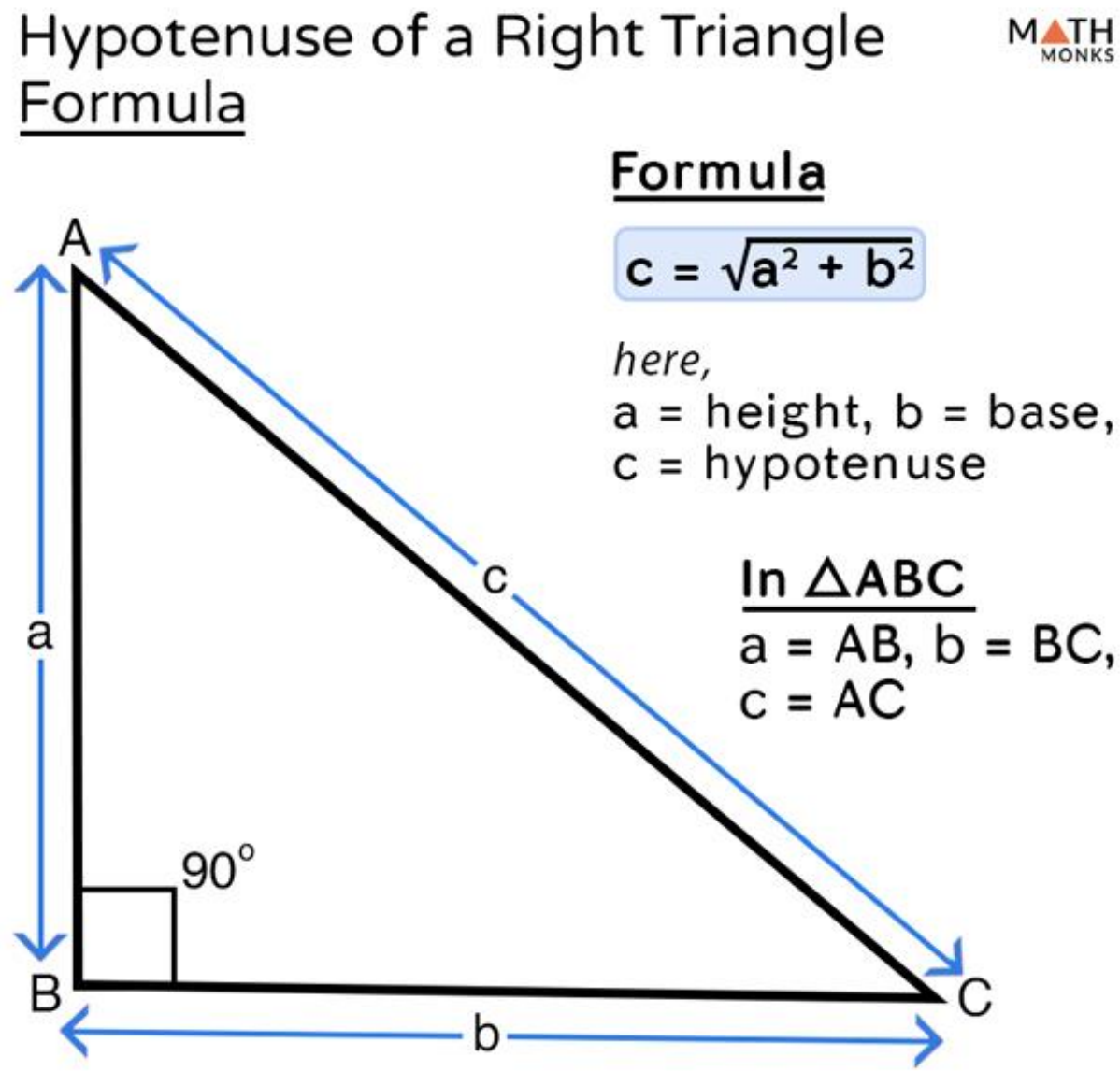
Exercise: Functions

Question 1: Compute the Hypotenuse

1. Create a python source code file (.py) called computehypotenuse.py
2. Write a function that takes the lengths of the two shorter sides of a right triangle as its parameters.
3. Return the hypotenuse of the triangle, computed using Pythagorean theorem, as the function's result.
4. Include a main program that reads the lengths of the shorter sides of a right triangle from the user, uses your function to compute the length of the hypotenuse, and displays the result.

Hint:



Question 2: Taxi Fare

1. Create a python source code file (.py) called taxifare.py
2. In a particular jurisdiction, taxi fares consist of a base fare of $4.00, plus $0.25 for every 140 meters travelled. Write a function that takes the distance travelled (in kilometers) as its only parameter and returns the total fare as its only result.
3. Write a main program that demonstrates the function.

Hint: If the distance travelled is 1.5km, we need to convert to meters first, so the distance travelled in meters is 1500m. Then we need to find how many times it travelled every 140 meters, 1500 / 140 = 10.714285714285714, lets round down, which is 10.

Then to calculate the fare, $4.00 + ($0.25 * 10) = $6.50

Question 3: Shipping Calculator

1. Create a python source code file (.py) called shippingcalculator.py
2. An online retailer provides express shipping for many of its items at a rate of $10.95 for the first item in an order, and $2.95 for each subsequent item in the same order. Write a function that takes the number of items in the order as its only parameter. Return the shipping charge for the order as the function's result.
3. Include a main program that reads the number of items purchased from the user and displays the shipping charge.

Question 4: Median of Three Values

1. Create a python source code file (.py) called medianthreevalues.py
2. Write a function that takes three numbers as parameters and returns the median value of those parameters as its result.
3. Include a main program that reads three values from the user and displays their median.

Hint: The median value is the middle of the three values when they are sorted into ascending order. It can be found using if statements, or with a little bit of mathematical creativity.