

Name _____

Grade _____

1. Write a function that takes the lengths of two legs of a right triangle as input and returns the length of the hypotenuse calculated using the Pythagorean theorem. In the main program, prompt the user for the lengths of the sides, call the function, and display the result on the screen.



$$C^2 = A^2 + B^2$$

You may need to use the `sqrt` function. Do not forget to add the necessary module for it in the first line:

`from math import sqrt`

2. Using lambda functions, write a code that will square each element of the list of numbers from a given list.

`nums = [1,3,5,6,4,2]`

`map()` is a function to help you

3. Write a program that illustrates the depreciation of the value of a laptop. The program takes three parameters, the year, the value of the laptop and the minimum resale value. The laptop depreciates by 20% in each subsequent year. The program should output the values from the model until the resale value is reached. E.g.

Example of ready program:

input	Year: 2015 Laptop was bought for: 300000 Minimum resale value: 20000
output	Laptop was bought for 300000 Tg. Minimum resale value is 20000 Tg 2015: 300000 Tg 2016: 240000 Tg 2017: 192000 Tg 2018: 153600 Tg 2019: 122880 Tg 2020: 98304 Tg 2021: 78643 Tg 2022: 62914 Tg 2023: 50331 Tg 2024: 40265 Tg 2025: 32212 Tg 2026: 25770 Tg 2027: 20616 Tg Part exchange in 2027.

- You can use formated string for convenience like this:
`print(f'{a}: {b} Tg')`
- The **round** function can be useful for round float values:
`b=round(b)`

4. A prime number is a number greater than one that is divisible only by itself and one without any remainder. The program below could output a list of prime numbers from 2 to the entered number. However, the programmer turned out to be hungry and malicious, so they deleted part of the code. Can you restore it?

```
def prime(x):  
    if x==2:  
        return True  
    for i in range(2,x):  
        if x%i==0:  
            return ...  
    return True  
  
def priit(y):  
    p=...  
    for i in range (2,y):  
        if prime(...)==True:  
            p.append(str(i))  
    s = ", ".join(p)  
    return ...  
  
a = int(input())  
print(priit(a))
```