Practical 1

1. Area of a Pentagon

A pentagon is a five sided figure with five vertices as shown below. Write a python program that prompts the user to input the length from the center of the pentagon to a vertex (r). The program will then compute and output the area of the pentagon.
The formula for computing the area is:

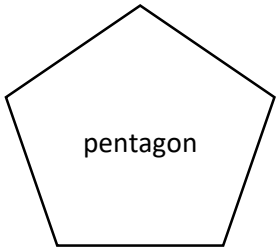
$$Area = \frac{3\sqrt{3}}{2}s^2$$

where s is the length of any side of the pentagon that may be computed using the formula:

$$s = 2r\sin\frac{\pi}{5}$$

where r is the length from the center of the pentagon to a vertex.

Hint: Use the sin function and π(pi) values from the math module.



2. Sum of Digits

Write a python program that inputs a 3-digit integer from the user, then adds all the digits of the integer and outputs the result. For example, if the input integer is 932, the output should be:

```
the sum of the digits is 9 + 3 + 2 = 14
```

Hint: Use math operations to separate the digits, not strings!

3. Simple Ifs

Train tickets are charged as follows: If a person buys seven or more tickets, they cost R10.75 each, otherwise they cost R15 each. If a person buys 14 or more tickets, they get a discount of 10% on the total price.
Write a python program that calculates and outputs the customer's bill (total cost) after inputting the number of tickets they wish to purchase.

4. Reverse a number

Write a python program that inputs an integer from the user in the range 0 to 999 (inclusive) and outputs the reverse of the number. For example, if the input integer is 932 - the output should be: `239`, if the input integer is 92 - the output should be: `29`
Hint: Do not use loops or strings!