```
'''
A simple program to calculate GST
'''
amountSpent = 100
gstRate = 7
gstTax = amountSpent*gstRate/100
print("You spent:", amountSpent)
print(gstTax)
grandTotal= amountSpent+gstTax
print(grandTotal)
print(amountSpent + gstTax)
```

```
You spent: 100
7.0
107.0
107.0
```

```
#input statement allow you to read input
#from the keyboard.input
#The value is read as a string
v=input("Enter a number")
print (v)
print(type(v))
```

```
Enter a number 90
90
<class 'str'>
```

```
'''
A simple program to calculate GST
'''

#input statement allow you to read input
#from the keyboard.input
#The value is read as a string
amount=input("Enter the amount spent")
#Convert input value from string to number
amountSpent = float(amount)

gstRate = 7
gstTax = amountSpent*gstRate/100
print("You spent:", amountSpent)
print(gstTax)
grandTotal= amountSpent+gstTax
print(grandTotal)
print(amountSpent + gstTax)
```

```
Enter the amount spent 90
You spent: 90.0
```

```
6.3
96.3
96.3
```

```
'''
Covert fahrenheit to centigrade
'''
tempF = float(input("Enter temperature in fahrenheit"))
tempC = 5 / 9 * (tempF - 32)
print("Result is", tempC)
```

```
Enter temperature in fahrenheit 40
Result is 4.444444444444445
```

```
'''
Read 3 numbers to sum up and average
'''
n1, n2, n3 = eval(input("Enter number"))
print(n1, n2, n3)
print((n1 + n2 + n3)/3)
```

```
Enter number 12, 20, 20
12 20 20
17.333333333333332
```

```
n1 = float(input("Enter number"))
n2 = float(input("Enter number"))
n3 = float(input("Enter number"))
sum = n1 + n2 + n3
print(sum)
avg = (sum/3)
print(avg)
```

```
Enter number 12
Enter number 12
Enter number 20
44.0
14.666666666666666
```

Q3

Eg. n = 145: 1 4 5

n//100 :1

n%10 : 5

n2 = n//10: 145//10 -> 14.5 -> 14

n2%10: 14%10 -> 4

```
'''
Read a 3-digit numbers, break it down to individual digits and sum them
'''
num = int(input("Enter a 3-digit number"))
#451
d1 = num // 100
d3 = num % 10
num2 = num // 10 # Reduce to 2-digit number
d2 = num2 % 10
print(d1,d2,d3)


or d2 = num // 10 % 10 # Reduce to 2-digit number
```

```
Enter a 3-digit number 521
5 2 1
```

```
'''
Input: How many cupcakes
Process: Calculate how many boxes needed
Output: Number of boxes and left over
'''
cakes = int(input("How many cakes"))
boxSize = int(input("How many cakes in 1 box?"))
boxes = cakes // boxSize
leftOver = cakes % boxSize
print("Number of boxes is", boxes)
print("Number of left over is", leftOver)
```

```
How many cakes 500
How many cakes in 1 box? 6
Number of boxes is 83
Number of left over is 2
```

```
'''
Input: How many cupcakes
Process: Calculate how many boxes needed (6)
Output: Number of boxes and left over
'''
cakes = int(input("How many cakes"))
boxes = cakes // 6
leftOver = cakes % 6
print("Number of boxes is", boxes)
print("Number of left over is", leftOver)
```

```
How many cakes 500
Number of boxes is 83
Number of left over is 2
```

```
#Using // (integer division) and % (remainder) to break down number

#input
timeInSec = int(input("Enter time in seconds")) #Read and convert in one step

#Processing
#3600 second in one hour, so divide by 3600 to get number of hours
hours = timeInSec // 3600     # // means integer part only
mins = timeInSec // 60 % 60   # Number of minutes
secs = timeInSec % 60         # Number of seconds

#Output
print(hours, "Hours", mins, "Minutes", secs, "Seconds")
'''
This question is similar to the cupcake question we did in class.input
Also similar to the question 3 (break a 3-digit number down to 3 parts)
'''
```

```
Enter time in seconds 500
0 Hours 8 Minutes 20 Seconds
```

```
'''
New Question
Ask user to enter 3 integer numbers: hours, minutes, seconds
Add 1 to seconds
Print the updated time.

Example:
User enters: 1 59 59 (That is 1 hour, 59 minutes, 59 seconds)
After adding 1, the program print: 2 0 0 (2 hours 0 minutes 0 seconds)
'''
#Input: read 3 numbers into 3 variables
hours = int(input("Enter hours"))
minutes = int(input("Enter minutes"))
seconds = int(input("Enter seconds"))

#Processing
seconds = seconds + 1
#If seconds is 60, then need to add 1 to minute.
extraMinute = seconds // 60    # If seconds is 60, we will get 1, else 0
seconds = seconds % 60         # Don't forget this step

#Now adjust the minutes (if necessary)
```

```
minutes = minutes + extraMinute       #Remember: extraMinute is either 0 or 1
extraHour = minutes // 60             #In case minutes become 60
minutes = minutes % 60                # same logic as previous step
hours = hours + extraHour             #extraHour is either 0 or 1

#Output
print(hours, "Hours", minutes, "Minutes", seconds, "Seconds")
```

```
Enter hours 1
Enter minutes 59
Enter seconds 59
2 Hours 0 Minutes 0 Seconds
```

```
'''
Get 3 numbers
Calculate: square root of (s*(s-a)*(s-b)*(s-c))
Print area

Notes:
I use * to indicate multiplication.
We need to use math library to calculate the square root.
Typo in the question, it should be Area = square root of (...) and NOT S =
square root of (...)
'''
import math   #This is to bring in all the code in the math library

# Input
a = float(input("Triangle side a?")) #Not recommended to use a,b,c as names.
Just following the question to make it easier to understand
b = float(input("Triangle side b?"))
c = float(input("Triangle side c?"))

# Processing
s = (a + b + c)/2
area = math.sqrt(s*(s-a)*(s-b)*(s-c))
#sqrt is the name of function for calculating square root

# Output
print ("Area is", area)
```

```
Triangle side a? 3
Triangle side b? 4
Triangle side c? 5
Area is 6.0
```

```
'''
Ask user to enter the radius of a circle
```

```
Calculate the Area
Print the Area
Have you found how to perform square and the value of the constant: PI
(3.14..)
They can be found in the math library
'''
import math #This is to bring all the code from the math library
#Input
radius = float(input("Enter the radius"))

#Calculation
area = math.pi * radius * radius
#or
area = math.pi * radius ** 2 #2 * with no space in between them
#or
area = math.pi*math.pow(radius, 2) # radius to the power of 2

#Output
print("Area of the circle is", area)
```

```
Enter the radius 10
Area of the circle is 314.1592653589793
```

Understanding Eval

```
'''
The function eval(...) is to evaluate/calculate the result of something
Sometimes, it can be a bit confusing as to whether to use eval(..) or other
functions like int(..)float(...) which convert string to numbers

A few examples of int() and float, then few examples on eval() to Sometimes
'''
value1 = int("123")
print(value1)
value2 = float("12.34")
print(value2)

value3 = eval("123")
print(value3)

#In those example, eval and int/float are equally good to convert string to
numbers
#The example below work only if you use eval

value4 = eval("1 + 2 + 3")
print (value4)
```

```
#We can use eval(...) to get multiple input values in 1 input statement
because eval() can break the input into multiple parts
#Assuming i want user to enter length and width of a rectangle
length, width = eval(input("Enter length and width"))
print(length)
print(width)
area = length * width
print (area)
#Just an example, take note when i enter the values, i use, to separate them
```

```
123
12.34
123
6
Enter length and width 6,7
6
7
42
```