**# Level 1**
**Q1) # Guessing Game**

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```
import random

def main():
        number = random.randint(1, 10)
        player_name = input('Enter your name : ')
        print('You have 5 attempts to guess the number')
        no_guesses = 0

        while no_guesses < 5:
                guess = int(input('Enter a number to guess: '))
                no_guesses +=1

                if guess < number:
                        print('Your guess is too low')
                elif guess > number:
                        print('Your guess is too high')

                elif guess == number:
                        print('You guessed the number in : ', no_guesses, ' tries')
                        exit()

if __name__ == '__main__':
        main()
```

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**Q2 ) # Python program to find Area of a Sector**

```
def SectorArea(radius, angle):
    pi = 22 / 7

    # Constraint or Limit
    if angle >= 360:
        print("Angle not possible")
        return

    # Calculating area of the sector
    else:
        sector = (pi * radius ** 2) * (angle / 360)
        print(sector)
        return

# Driver code
radius = int(input('Enter radius of sector : '))
angle = int(input('Enter the angle of the sector : '))
SectorArea(radius, angle)
```

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**Q3) # Python program for simple calculator application**

```
# Function to add two numbers
def add(num1, num2):
    return num1 + num2

# Function to subtract two numbers
def subtract(num1, num2):
    return num1 - num2

# Function to multiply two numbers
def multiply(num1, num2):
    return num1 * num2

# Function to divide two numbers
def divide(num1, num2):
    return num1 / num2

print("Please select operation -\n" \
        "1. Add\n" \
        "2. Subtract\n" \
        "3. Multiply\n" \
        "4. Divide\n")


# Take input from the user
select = int(input("Select operations form 1, 2, 3, 4 :"))

number_1 = int(input("Enter first number: "))
number_2 = int(input("Enter second number: "))

if select == 1:
    print(number_1, "+", number_2, "=",
                add(number_1, number_2))

elif select == 2:
    print(number_1, "-", number_2, "=",
                subtract(number_1, number_2))

elif select == 3:
    print(number_1, "*", number_2, "=",
                multiply(number_1, number_2))

elif select == 4:
    print(number_1, "/", number_2, "=",
                divide(number_1, number_2))
else:
    print("Invalid input")
```

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**# Level 2**

**Q1 ) # Floor square root of a number**

```
def floor_sqrt(number):
        if ( number == 0 or number ==1 ) :
                return number

        i = 1
        result = 1
        while result <= number:
                i += 1
                print('Value of : i : ', i)
                result = i*i

                print('Value of result : ', result)

        return i-1 # this loop will exit when the condition will be false, so we decrement i by 1

number = int(input('Enter a number to find floor sqrt of : '))

print(floor_sqrt(number))
```

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**Q2) # Program to find area of segment of a circle**

```
import math

pi = 3.14159

# Function to find
# area of segment
def area_of_segment(radius, angle):
    # Calculating area of sector
    area_of_sector = pi *
                (radius * radius)
                * (angle / 360)

    # Calculating area of triangle
    area_of_triangle = 1 / 2 *
                 (radius * radius) *
                 math.sin((angle * pi) / 180)

    return area_of_sector - area_of_triangle;


# Driver Code
radius = 10.0
angle = 90.0
print("Area of minor segment =",
       area_of_segment(radius, angle))
print("Area of major segment =",
      area_of_segment(radius, (360 - angle)))
```