

#1. Write a Python program (WAP) to find the simple interest

```
principal = float(input("Enter the principal amount: "))
rate = float(input("Enter the rate of interest: "))
time = float(input("Enter the time (in years): "))

simple_interest = (principal * rate * time) / 100

print("The simple interest is:", simple_interest)
```

```
↩ Enter the principal amount: 1000
Enter the rate of interest: 5
Enter the time (in years): 2
The simple interest is: 100.0
```

#2. WAP to convert the length in feet to centimeter.

```
feet = float(input("Enter the length in feet: "))
feet_to_cm = 30.48
centimeters = feet * feet_to_cm
print("The length in centimeters is:", centimeters)
```

#3. WAP to read the two sides of a rectangle and calculate its area.

```
base = int(input("Enter the base: "))
height = int(input("Enter the height: "))

area = base*height

print("Area of the rectangle is ",area)
```

```
↩ Enter the base: 4
Enter the height: 6
Area of the rectangle is 24
```

#4. WAP to compute the area of a circle.

```
radius = int(input("Enter the radius:"))

area = 3.14 * radius * radius

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

```
↩ Enter the radius:7
Area of the circle is 153.86
```

#5. WAP to find the g.c.d of 2 numbers.

```
import math

num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))

gcd = math.gcd(num1,num2)

print("The GCD of the two numbers is:", gcd)
```

```
↩ Enter the first number: 48
Enter the second number: 18
The GCD of the two numbers is: 6
```

#6. WAP that output the factorial of a given number.

```
fact = 1
i = 1

n = int(input("Enter the number: "))
```

```
while i<=n:
    fact = fact*i
    i=i+1
```

```
print(fact)
```

```
↩ Enter the number: 5
120
```

#7. WAP that print prime numbers between 2 numbers.

```
start = int(input("Enter the starting number: "))
end = int(input("Enter the ending number: "))
```

```
for num in range(start, end + 1):
    if num > 1:
        flag = True
        for i in range(2, int(num**0.5) + 1):
            if num % i == 0:
                flag = False
                break
        if flag:
            print(num)
```

```
↩ Enter the starting number: 10
Enter the ending number: 30
11
13
17
19
23
29
```

#8. WAP that calculate the roots of a quadratic equation.

```
import math
def find_roots(a, b, c):
    x = b**2 - (4 * a * c)
    if x > 0:
        m = (-b + math.sqrt(x)) / (2 * a)
        n = (-b - math.sqrt(x)) / (2 * a)
        print(f"The roots are real and different: m = {m}, n = {n}")
    elif x == 0:
        p = -b / (2 * a)
        print(f"The root is real and repeated: p = {p}")
    else:
        realPart = -b / (2 * a)
        imaginaryPart = math.sqrt(-x) / (2 * a)
        e = f"{realPart} + {imaginaryPart}i"
        f = f"{realPart} - {imaginaryPart}i"
        print(f"The roots are complex: e = {e}, f = {f}")
```

```
a = int(input("Enter the first coefficient: "))
b = int(input("Enter the second coefficient: "))
c = int(input("Enter the third coefficient: "))
find_roots(a, b, c)
```

```
↩ Enter the first coefficient: 1
Enter the second coefficient: -4
Enter the third coefficient: 4
The root is real and repeated: p = 2.0
```

#9. WAP to compute the sum of two numbers. If the sum is below or equal to twenty, two numbers will be entered again. If the sum is above 20

```
num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))
```

```
sum = num1 + num2
```

```
if sum <=20:
    num1 = int(input("Enter the first number: "))
    num2 = int(input("Enter the second number: "))
    sum = num1 + num2
    print(sum)
else:
```

```
print("Sum is above 20")
```

```
↵ Enter the first number: 40  
Enter the second number: 7  
Sum is above 20
```

#10. WAP that output the Fibonacci series up to a given number.

```
n = int(input("Enter the maximum number for the Fibonacci series: "))
```

```
a = 0
```

```
b = 1
```

```
print("Fibonacci series up to", n, "is:")
```

```
while a <= n:  
    print(a, end=' ')  
    next_number = a + b  
    a = b  
    b = next_number
```

```
↵ Enter the maximum number for the Fibonacci series: 4  
Fibonacci series up to 4 is:  
0 1 1 2 3
```