In [1]:
```
# 1. Declare your age as an integer variable
age = 22
print(age)
print(type(age))
```

```
22
<class 'int'>
```

In [2]:
```
# 2. Declare your height as a float variable
height = 5.4
print(height)
print(type(height))
```

```
5.4
<class 'float'>
```

In [3]:
```
# 3. Declare a variable that stores a complex number
complex_num = 3 + 4j
print(complex_num)
print(type(complex_num))
```

```
(3+4j)
<class 'complex'>
```

In [4]:
```
# 4. Calculate area of a triangle
base = int(input("Enter base: "))
height= int(input("Enter height: "))
area_triangle = 0.5 * base * height
print("The area of the triangle is", area_triangle)
```

```
Enter base: 4
Enter height: 3
The area of the triangle is 6.0
```

In [5]:
```
# 5. Calculate perimeter of a triangle
a = int(input("Enter side a: "))
b = int(input("Enter side b: "))
c = int(input("Enter side c: "))
perimeter_triangle = a + b + c
print("The perimeter of the triangle is", perimeter_triangle)
```

```
Enter side a: 5
Enter side b: 3
Enter side c: 4
The perimeter of the triangle is 12
```

In [6]:
```
# 6. Area and perimeter of a rectangle
length = float(input("Enter length: "))
width = float(input("Enter width: "))
area_rectangle = length * width
perimeter_rectangle = 2 * (length + width)
print("Area of rectangle:", area_rectangle)
print("Perimeter of rectangle:", perimeter_rectangle)
```

```
Enter length: 3
Enter width: 5
Area of rectangle: 15.0
Perimeter of rectangle: 16.0
```

In [7]:
```
# 7. Area and circumference of a circle
radius = float(input("Enter radius: "))
pi = 3.14
area_circle = pi * radius ** 2
circumference = 2 * pi * radius
print("Area of the circle:", area_circle)
print("Circumference of the circle:", circumference)
```

```
Enter radius: 2.5
Area of the circle: 19.625
Circumference of the circle: 15.700000000000001
```

In [8]:
```
# 8. Calculate slope, x-intercept, and y-intercept of y = 2x - 2
m = 2
y_intercept = -2
x_intercept = -y_intercept / m
print("Slope:", m)
print("x-intercept:", x_intercept)
print("y-intercept:", y_intercept)
```

```
Slope: 2
x-intercept: 1.0
y-intercept: -2
```

In [9]:
```
# Slope is (m = y2-y1/x2-x1). Find the slope and Euclidean distance
#between point (2, 2) and point (6,10)
x1, y1 = 2, 2
x2, y2 = 6, 10
slope = (y2 - y1) / (x2 - x1)
import math
distance = math.sqrt((x2 - x1)**2 + (y2 - y1)**2)
print("Slope between points:", slope)
print("Euclidean distance:", distance)
```

```
Slope between points: 2.0
Euclidean distance: 8.94427190999916
```

In [10]:
```
# 10. Compare slopes in tasks 8 and 9
print("Are slopes equal?", m == slope)
```

```
Are slopes equal? True
```

In [11]:
```
# 11. Calculate the value of y (y = x^2 + 6x + 9). Try to use different x valu
#and figure out at what x value y is going to be 0.
# Let's test different x values
for x in range(-10, 10):
    y = x**2 + 6*x + 9
    if y == 0:
        print("y is 0 when x =", x)
```

```
y is 0 when x = -3
```

In [12]:
```
#12. Find the length of 'python' and 'dragon' and
#make a falsy comparison statement.
print(len("python") != len("dragon"))
```

```
False
```

In [13]:
```
#13. Use and operator to check if 'on' is found
#in both 'python' and 'dragon'
print("on" in "python" and "on" in "dragon")
```

```
True
```

In [14]:
```
#14. I hope this course is not full of jargon.
#Use in operator to check if jargon is in the sentence.
sentence = "I hope this course is not full of jargon."
print("jargon" in sentence)
```

```
True
```

In [15]:
```
#15. There is no 'on' in both dragon and python
print("on" not in "dragon" and "on" not in "python")
```

```
False
```

In [16]:
```
#16. Find the length of the text python and
#convert the value to float and convert it to string
length_py = len("python")
float_len = float(length_py)
string_len = str(float_len)
print("Float:", float_len, "String:", string_len)
```

```
Float: 6.0 String: 6.0
```

In [17]:
```
#17. Even numbers are divisible by 2 and the remainder
#is zero. How do you check if a number is even or not using python?
num = int(input("Enter a number to check even or not: "))
print("Even number?" , num % 2 == 0)
```

```
Enter a number to check even or not: 6
Even number? True
```

In [18]:
```
#18. Check if the floor division of 7 by 3 is
#equal to the int converted value of 2.7.
print(7 // 3 == int(2.7))
```

```
True
```

In [19]:
```
#19. Check if type of '10' is equal to type of 10
print(type('10') == type(10))
```

```
False
```

In [20]:
```
#20. Check if int('9.8') is equal to 10
try:
    print(int('9.8') == 10)
except ValueError:
    print("Cannot convert '9.8' directly to int")
```

```
Cannot convert '9.8' directly to int
```

In [21]:
```
#21. Writ a script that prompts the user to enter
#hours and rate per hour. Calculate pay of the person?
hours = float(input("Enter hours: "))
rate = float(input("Enter rate per hour: "))
earning = hours * rate
print("Your weekly earning is", earning)
```

```
Enter hours: 40
Enter rate per hour: 28
Your weekly earning is 1120.0
```

In [22]:
```
#22. Write a script that prompts the user to enter number of years.
#Calculate the number of seconds a person can live. Assume a person can live h
years = int(input("Enter number of years you have lived: "))
seconds = years * 365 * 24 * 60 * 60
print(f"You have lived for {seconds} seconds.")
```

```
Enter number of years you have lived: 100
You have lived for 3153600000 seconds.
```

In [23]:
```
#23. Write a Python script that displays the following table
print("1 1 1 1 1")
print("2 1 2 4 8")
print("3 1 3 9 27")
print("4 1 4 16 64")
print("5 1 5 25 125")
```

```
1 1 1 1 1
2 1 2 4 8
3 1 3 9 27
4 1 4 16 64
5 1 5 25 125
```

In [ ]: