PYTHON WORKSHEET 1

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#q1

print("Twinkle, twinkle, little star,")

print("\tHow I wonder what you are!")

print("\t\tUp above the world so high,")

print("\t\tLike a diamond in the sky.")

print("Twinkle, twinkle, little star,")

print("\tHow I wonder what you are!")

#q2

first\_name = input("Enter your first name: ")

last\_name = input("Enter your last name: ")

print(last\_name, first\_name)

#q3

import math

radius = float(input("Enter the radius of the circle: "))

area = math.pi \* radius\*\*2

print("The area of the circle with radius", radius, "is:", area)

#q4

color\_list = ["Red", "Green", "White", "Black"]

print("First color:", color\_list[0])

print("Last color:", color\_list[-1])

#q5

n = input("Enter an integer (n): ")

n1 = int(n)

n2 = int(n + n)

n3 = int(n + n + n)

result = n1 + n2 + n3

print("The value of n+nn+nnn is:", result)

#q6

data = input("Enter comma-separated numbers: ")

number\_list = data.split(',')

number\_tuple = tuple(number\_list)

print("List:", number\_list)

print("Tuple:", number\_tuple)

#q7

celsius = float(input("Enter temperature in Celsius: "))

fahrenheit = (9/5) \* celsius + 32

print(celsius, "C is equal to", fahrenheit, "F")

#q8

a = int(input("Enter first number (a): "))

b = int(input("Enter second number (b): "))

print("Original numbers: a =", a, ", b =", b)

# Swapping the numbers using a temporary variable

temp = a

a = b

b = temp

# Incrementing the swapped numbers by 1

a = a + 1

b = b + 1

print("Swapped and incremented numbers: a =", a, ", b =", b)

#q9

num = int(input("Enter an integer: "))

if num % 2 == 0:

print("The number", num, "is even.")

else:

print("The number", num, "is odd.")

#q10

year = int(input("Enter a year: "))

if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):

print("The year", year, "is a leap year.")

else:

print("The year", year, "is not a leap year.")

#q11

import math

x1 = float(input("Enter x-coordinate of first point: "))

y1 = float(input("Enter y-coordinate of first point: "))

x2 = float(input("Enter x-coordinate of second point: "))

y2 = float(input("Enter y-coordinate of second point: "))

distance = math.sqrt((x2 - x1)\*\*2 + (y2 - y1)\*\*2)

print("The Euclidean distance is:", distance)

#q12

angle1 = float(input("Enter the first angle: "))

angle2 = float(input("Enter the second angle: "))

angle3 = float(input("Enter the third angle: "))

if angle1 + angle2 + angle3 == 180 and angle1 > 0 and angle2 > 0 and angle3 > 0:

print("These angles can form a triangle.")

else:

print("These angles cannot form a triangle.")

#q13

principal = float(input("Enter the principal amount: "))

rate = float(input("Enter the annual interest rate (in decimal): "))

time = float(input("Enter the number of years: "))

compounding\_frequency = float(input("Enter the number of times interest is compounded per year: "))

amount = principal \* (1 + rate / compounding\_frequency)\*\*(compounding\_frequency \* time)

compound\_interest = amount - principal

print("The compound interest is:", round(compound\_interest, 2))

print("The total amount after compounding is:", round(amount, 2))

#q14

N = int(input("Enter a positive integer: "))

if N > 1:

is\_prime = True

for i in range(2, int(N\*\*0.5) + 1):

if N % i == 0:

is\_prime = False

break

if is\_prime:

print("The number", N, "is prime.")

else:

print("The number", N, "is not prime.")

else:

print("The number", N, "is not prime.")

#q15

N = int(input("Enter a positive integer (N): "))

sum\_of\_squares = 0

for i in range(1, N + 1):

sum\_of\_squares += i\*\*2

print("The sum of squares up to", N, "is:", sum\_of\_squares)