import math

def display\_menu():

print("\n==== Scientific Calculator ====")

print("1. Addition")

print("2. Subtraction")

print("3. Multiplication")

print("4. Division")

print("5. Power (x^y)")

print("6. Square Root")

print("7. Logarithm (base 10)")

print("8. Sine (degrees)")

print("9. Cosine (degrees)")

print("10. Tangent (degrees)")

print("0. Exit")

def get\_number(prompt="Enter number: "):

try:

return float(input(prompt))

except ValueError:

print("Invalid input. Please enter a number.")

return get\_number(prompt)

def main():

while True:

display\_menu()

choice = input("Choose an operation (0-10): ")

if choice == '0':

print("Exiting calculator.")

break

elif choice in ['1', '2', '3', '4', '5']:

num1 = get\_number("Enter first number: ")

num2 = get\_number("Enter second number: ")

if choice == '1':

print(f"Result: {num1 + num2}")

elif choice == '2':

print(f"Result: {num1 - num2}")

elif choice == '3':

print(f"Result: {num1 \* num2}")

elif choice == '4':

if num2 != 0:

print(f"Result: {num1 / num2}")

else:

print("Error: Division by zero.")

elif choice == '5':

print(f"Result: {math.pow(num1, num2)}")

elif choice == '6':

num = get\_number()

if num >= 0:

print(f"Square Root: {math.sqrt(num)}")

else:

print("Error: Cannot compute square root of a negative number.")

elif choice == '7':

num = get\_number()

if num > 0:

print(f"Logarithm (base 10): {math.log10(num)}")

else:

print("Error: Logarithm undefined for non-positive numbers.")

elif choice in ['8', '9', '10']:

angle = get\_number("Enter angle in degrees: ")

radians = math.radians(angle)

if choice == '8':

print(f"Sine({angle}°): {math.sin(radians)}")

elif choice == '9':

print(f"Cosine({angle}°): {math.cos(radians)}")

elif choice == '10':

print(f"Tangent({angle}°): {math.tan(radians)}")

else:

print("Invalid choice. Please enter a number between 0 and 10.")

if \_\_name\_\_ == "\_\_main\_\_":

main()