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import math

def calculator():
    print("Welcome to the Best Calculator!")
    print("Choose an operation:")
    print("1. Addition (+)")
    print("2. Subtraction (-)")
    print("3. Multiplication (*)")
    print("4. Division (/)")
    print("5. Power (^)")
    print("6. Square Root")
    print("7. Trigonometric Functions (sin, cos, tan)")
    print("8. Exit")

    while True:
        try:
            choice = input("\nEnter your choice (1-8): ")

            if choice == '8':
                print("Exiting the calculator. Goodbye!")
                break

            if choice in ['1', '2', '3', '4', '5']:
                num1 = float(input("Enter the first number: "))
                num2 = float(input("Enter the 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 is not allowed.")
                elif choice == '5':
                    print(f"Result: {num1 ** num2}")

            elif choice == '6':
                num = float(input("Enter the number: "))
                if num >= 0:
                    print(f"Result: {math.sqrt(num)}")
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            else:
                print("Error: Cannot calculate the square root of a negative number.")

        elif choice == '7':
            print("\nChoose a trigonometric function:")
            print("1. Sine (sin)")
            print("2. Cosine (cos)")
            print("3. Tangent (tan)")
            trig_choice = input("Enter your choice (1-3): ")
            angle = float(input("Enter the angle in degrees: "))
            radians = math.radians(angle)

            if trig_choice == '1':
                print(f"sin({angle}) = {math.sin(radians)}")
            elif trig_choice == '2':
                print(f"cos({angle}) = {math.cos(radians)}")
            elif trig_choice == '3':
                print(f"tan({angle}) = {math.tan(radians)}")
            else:
                print("Invalid choice for trigonometric function.")
        else:
            print("Invalid choice. Please try again.")

    except ValueError:
        print("Error: Invalid input. Please enter numbers only.")
    except Exception as e:
        print(f"An unexpected error occurred: {e}")

# Run the calculator
calculator()
```