***Q1.*** ***Write a C++ program to implement a function to calculate the power of a number.***

***Solution:***

#include <iostream>

// Function to calculate the power of a number

double power(double base, int exponent) {

double result = 1.0;

// Calculate power using a loop

for (int i = 0; i < exponent; ++i) {

result \*= base;

}

return result;

}

int main() {

// Example usage

double base;

int exponent;

// Get user input

std::cout << "Enter the base: ";

std::cin >> base;

std::cout << "Enter the exponent: ";

std::cin >> exponent;

// Calculate and display the result

double result = power(base, exponent);

std::cout << base << " raised to the power of " << exponent << " is: " << result << std::endl;

return 0;

***}***