#include <stdio.h>

#include <math.h>

int main() {

double result;

printf("PEMDAS: Parentheses, Exponentiation, Multiplication, Division, Addition, Subtraction\n");

printf("Example expression: (2+3)\*4^2/8-5\n");

// Manually calculating step-by-step to show precedence

double step1 = 2 + 3; // Parentheses

double step2 = pow(step1, 2); // Exponentiation

double step3 = step2 \* 4; // Multiplication

double step4 = step3 / 8; // Division

result = step4 - 5; // Subtraction

printf("Step 1 (Parentheses): 2+3 = %.2f\n", step1);

printf("Step 2 (Exponentiation): %.2f^2 = %.2f\n", step1, step2);

printf("Step 3 (Multiplication): %.2f \* 4 = %.2f\n", step2, step3);

printf("Step 4 (Division): %.2f / 8 = %.2f\n", step3, step4);

printf("Step 5 (Subtraction): %.2f - 5 = %.2f\n", step4, result);

printf("\nFinal Result = %.2f\n", result);

return 0;

}

