

```
#include <stdio.h>
#define TEST_VALS { -1, 0, 1, 2, 10, 100 }

/* function to estimate pi using given number of terms */
double estimatePi(int terms) {
    if (terms <= 0) return 0.0;    // ignore bad inputs
    double number = -1.0, denom = 0.0, pi = 0.0;

    for (int i=0; i<terms; i++) { // loop through terms
        number *= -1;
        denom  = 2*i + 1;
        pi    += number / denom;
    }

    return 4*pi;
}

/* function to test estPi() */
void testEstimatePi() {
    int vals[] = TEST_VALS;

    for (int i=0; i<6; i++) {
        printf( "%3d %f\n", vals[i], estimatePi( vals[i] ) );
    }
}

/* function to interact with user */
void interact() {
    int terms = 1;
    printf("Welcome to the Pi Estimator!\n");

    while (terms > 0) {
        printf("How many terms do you want (0 to quit)? ");
        scanf("%d", &terms);
        printf("Pi with %d terms is %f\n", terms, estimatePi(terms));
    }

    printf("Goodbye!");
}

/* main function, called when the program runs */
void main() {
    testEstimatePi();
    interact();
}
```