linearSystem

Write a C program that computes the solutions for x and y in the linear system of equations:

$$a_1x + b_1y = c_1$$
$$a_2x + b_2y = c_2$$

The solutions for x and y are given by:

$$x = \frac{b_2c_1 - b_1c_2}{a_1b_2 - a_2b_1} \quad \text{and} \quad y = \frac{a_1c_2 - a_2c_1}{a_1b_2 - a_2b_1}$$

The program reads in a_1, b_1, c_1, a_2, b_2 and c_2, and then computes and prints the solutions. In your program, if the denominator ($a_1b_2 - a_2b_1$) of the above equations is zero, then it prints an error message "Denominator is zero!". No need to check errors on user input.

A sample program template is given below.

```
#include <stdio.h>
#include <math.h>
int main()
{
  /* Write your code here */
  return 0;
}
```

```
#include <stdio.h>
#include <math.h>
int main()
{
   float  a1, b1, c1, a2, b2, c2;
   float num1,num2,de;
   float x,y;
   printf("Enter a1,b1,c1,a2,b2,c2:\n");
   scanf("%f %f %f %f %f %f\n",&a1,&b1,&c1,&a2,&b2,&c2);
   de=((a1*b2)-(a2*b1));

   if(de==0)
   {
      printf("Denominator is zero!");
   }
   else
   {
      num1 = b2*c1-b1*c2;
      num2 = a1*c2-a2*c1;
      x= num1/de;
      y=num2/de;
      printf("x=%.2f,y=%.2f",x,y);
   }
  return 0;
}
```

Sample input and output sessions are given below:

(1) Test Case 1:
Enter a1,b1,c1,a2,b2,c2:
1 1 1 5 7 9
x=-1.00,y=2.00

(2) Test Case 2:
Enter a1,b1,c1,a2,b2,c2:
1 1 2 2 3 3
x=3.00,y=-1.00

(3) Test Case 3:
Enter a1,b1,c1,a2,b2,c2:
1 3 2 5 3 3
x=0.25,y=0.58

(4) Test Case 4:
Enter a1,b1,c1,a2,b2,c2:
1 1 1 1 1 1
Denominator is zero!