

```

1 #include <stdio.h>
2
3 #define N 6      /* 求める桁数 5*(N+1) 桁 */
4 #define DEG 100000 /* 桁数の基準 */
5
6 void adds(int x[], int y[], int z[]); /* z = x+y */
7 void subs(int x[], int y[], int z[]); /* z = x-y */
8 void muls(int x[], int z[], int n ); /* z = x*n */
9 void divs(int x[], int z[], int n); /* z = x/n */
10 void print_result(int x[]); /* 表示用関数 */
11
12 int main(void)
13 {
14     int x[N+1] = {00002, 12345, 99999, 33333, 44444, 55555, 66666};
15     int y[N+1] = {00001, 45678, 88888, 90000, 88888, 77777, 66666};
16     int z[N+1]; /* 結果は z へ */
17
18     printf("x = "); print_result(x);
19     printf("y = "); print_result(y);
20     adds(x, y, z); printf("x+y=\t"); print_result(z);
21     subs(x, y, z); printf("x-y=\t"); print_result(z);
22     muls(x, z, 9999); printf("x*9999=\t"); print_result(z);
23     divs(x, z, 9999); printf("x/9999=\t"); print_result(z);
24
25     return 0;
26 }
27
28 void adds(int x[], int y[], int z[])
29 {
30     int up, i, sum;
31     /* 加算 */
32     up = 0;
33     for ( i=N; i>=0; i--)
34     {
35         sum = x[i]+y[i]+up;
36         if ( sum > DEG-1 )
37         {
38             z[i] = sum - DEG;
39             up = 1;
40         }
41         else
42         {
43             z[i]=sum; up = 0;
44         }
45     }
46 }
47
48 void subs(int x[], int y[], int z[])
49 {
50     int borrow, i, sub;
51     /* 減算 */
52     borrow = 0;
53     for ( i=N; i>=0; i--)
54     {
55         sub = x[i]-y[i]-borrow;
56         if ( sub >= 0)
57         {
58             z[i] = sub; borrow = 0;
59         }
60         else
61         {
62             z[i] = DEG + sub;
63             borrow = 1;
64         }
65     }
66 }
67
68 void muls(int x[], int z[], int n )
69 {
70     /* 乗算 */
71     int i, up=0, prod;
72     for ( i=N; i>=0; i--)
73     {
74         prod = x[i] * n + up;
75         z[i] = prod % DEG;
76         up = prod / DEG;
77     }
78 }
79
80 void divs(int x[], int z[], int n)
81 {
82     /* 除算 */
83     int amari, i, bunshi;
84     amari = 0;
85     for ( i=0 ; i<=N; i++)
86     {
87         bunshi = amari * DEG + x[i];
88         z[i] = bunshi/n;
89         amari = bunshi % n;
90     }
91 }
92
93 void print_result(int x[])
94 {
95     int i;
96     for ( i = 0; i <= N; i++)
97     {
98         printf("%05u ",x[i]);
99     }
100     printf("\n");
101 }

```