**2864. Function tabulation**

Write a program that displays a table of values for the function

*y* = 3 \* sin(*x*)

over the interval from *a* to *b* inclusive, with a step size of *h*.

**Input.** Three real numbers *a*, *b* and *h*.

**Output.** For each value of *x* in the given interval, print two numbers *x* and *y* on a separate line, in ascending order of *x*. Both numbers must be printed with three decimal places.

|  |  |
| --- | --- |
| **Sample input** | **Sample output** |
| 1 2 0.5 | 1.000 2.524  1.500 2.992  2.000 2.728 |

**SOLUTION**

**loops**

# Algorithm analysis

Iterate over the values of *x* from *a* to *b* with a step of *h*. For each value of *x*, print a pair of numbers: *x* and 3 \* sin(*x*).

# Algorithm implementation

The function ***f*** returns the value 3 \* sin(*x*).

double f(double x)

{

return 3 \* sin(x);

}

The main part of the program. Read the input data.

scanf("%lf %lf %lf", &a, &b, &h);

Iterate over the values of *x* from *a* to *b* with a step of *h*. For each value of *x*, we print a pair of numbers: *x* and *f*(*x*).

for (x = a; x <= b; x += h)

printf("%.3lf %.3lf\n", x, f(x));