Read chapter 4.

Some of the following problems are based on the questions which start on page 190 of the text. Variables $i$, $j$, and $k$ are integers. All others are real.

1. What is the output generated by the following code?

```plaintext
i = 0
j = -2
k = 2
do 10 i=j,k
   print *, i,j,k
   j = j - i
   k = k + i
10 continue
```

2. What is the output generated by the following code?

```plaintext
do 100 i=1,3
   do 90 j=0,5,2
      do 80 k=i,j
         print *, i+j+k
      80 continue
   90 continue
100 continue
```
3. What is the output generated by the following code?

```plaintext
do 10 x=1.25,5.5
   print *, 2.0 * x
10 continue
```

4. Using a DO-loop, write code that will read a value for the integer variable $n$ and then print all multiples of $n$ between 1 and 1000. You could use the `MOD()` function to solve this problem, but that would be inefficient. Try to come up with a better way.
5. Using a DO-loop, write code that will read a value for the integer variable n, then read n real values and print their sum. For example, if the user entered 3 for n, the code should read in three values, and then print the sum of those values.

6. Using a DO-loop, write code that will read a value for the integer variable n and then print n equally-spaced points in the range from $-5.0$ to $5.0$, including the end points, together with the value of $e^{-x} \cos(x)$ evaluated at these points. (You can assume that n will always be at least two.) As an example, if the user entered 3 for n, the output would be:

$$
-5. \quad 42.099205 \\
0. \quad 1. \\
5. \quad 0.00191130082
$$

You will need to do some calculating of variables outside of the DO-loop. For the sake of this homework, any variables other than i, j, k, and n will be considered real, so you don’t need to explicitly declare anything. Just write the relevant code to accomplish the task.