1 Sorting (100 points)

The following code sorts an array using an algorithm called *bubblesort*.

```
function x = bubblesort(x)

 disp('====================== INPUT ARRAY ============================')
 fprintf('(Array x) '); disp(x)
 disp('===============================================================')

n = length(x);
step = 0;
for i=1:n-1
   for j=1:n-i
      if x(j) > x(j+1)
         temp = x(j+1);
         x(j+1) = x(j);
         x(j)   = temp;
      end
      step = step + 1;
      fprintf('(Step %2d) ',step); disp(x);
   end
   fprintf('(Pass %2d) ',i); disp(x);
end
```

If we run the following script, could you fill in the entries for the array after each step?

```
x = [5 4 3 1 2];
y = bublesort(x);
```

(Step 1)					
(Step 2)					
(Step 3)					
(Step 4)					
(Pass 1)					
(Step 5)					
(Step 6)					
(Step 7)					
(Pass 2)					
(Step 8)					
(Step 9)					
(Pass 3)					
(Step 10)					
(Pass 4)					