**What does an output of 1 indicate for the following algorithm running on a five-element list of integers?**

i = 0   
x = 0   
while i < 5   
   if list[i] < 0   
      x = 1   
   i = i + 1  
Put x to output

The questions as about an output of 1, so we want to begin by looking to find out what the output is. The last line tells us that x will be put to output.

Next we need to determine what happens with x. On the 2nd line x starts with a value of 0, but the question wants to know what an value of x = 1 tells us. We have to track down where x would be changed to 1.

Variable x will only be changed if the if statement is true. That condition is looking to see if a list item (and it will go through each one because of the while loop) is less than 0. If it finds any number in the five-element list to be less than 0, or a negative number, x is changed to 1 and that will be the output.

Here are some notes with each line to explain what happens the first time through the while loop:

**What does an output of 1 indicate for the following algorithm running on a five-element list of integers?**

i = 0      # i starts at 0  
x = 0      # x starts at 0

while i < 5       # first time through the loop, while 0<5 (TRUE) go through the next 3 lines  
   if list[i] < 0       # we don't see the specific items in a list, but we know that if the first item in the list, list[0], is less than 0 then we set x to 1. if it is not, we don't do anything with x. Only take action when the list item we look at is a negative number, or les than 0.  
      x = 1  
   i = i + 1      # add 1 to i and check the while loop to see if we should run again  
Put x to output      # put x to output

The second time through the while loop we will check list[1], then check list [2], then list[3], and finally list[4]. We will look at each item in the list and if any of them are negative x gets set to 1.