1. What are the principles and main challenges of testing component-based software?

You may use the following article as source (available both in paper format and in electronic format in the online materials of the Kumpula Science Library):


2. Give an example of a program that can be tested by complete statement coverage but not by complete branch coverage.

3. Let us study the following program:

```c
x=0; read(y); 
while (y > 100) { x=x+y; read(y); } 
if (y < 200) print(x) else print(y);
```

a) Construct a control-flow graph for the program.

b) Design test cases for reaching complete branch coverage over the program. Use as few test cases as possible.

4. Give an example of a program defect that can be found in white-box testing when following the multicondition coverage principle but not (necessarily) when following the branch coverage principle.