

Answers to Questions from TT3.1

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1: Assume that age has the value 0. List the actions the computer executes when it runs the following code.

```
puts('Message 0')  
while (age < 5)  
    puts('Message 1')  
    age = age + 1  
end  
puts('Message 2')
```

Sequence	Action	Note
1	Calls the puts() procedure with the text 'Message 0'	
2	Evaluates the expression (condition of while) age < 5	Condition is true.
3	Jumps into the while loop	
4	Calls the puts() procedure with the text 'Message 1'	
5	Adds an +1 to the age variable	Age now 1
6	Returns to the top of the while loop	
7	Evaluates the expression (condition of while) age < 5	Condition is true.
8	Calls the puts() procedure with the text 'Message 1'	
9	Adds an +1 to the age variable	Age now 2
10	Returns to the top of the while loop	
11	Evaluates the expression (condition of while) age < 5	Condition is true.
12	Calls the puts() procedure with the text 'Message 1'	
13	Adds an +1 to the age variable	Age now 3
14	Returns to the top of the while loop	
15	Evaluates the expression (condition of while) age < 5	Condition is true.
16	Calls the puts() procedure with the text 'Message 1'	
17	Adds an +1 to the age variable	Age now 4
18	Returns to the top of the while loop	
19	Evaluates the expression (condition of while) age < 5	Condition is true.
18	Calls the puts() procedure with the text 'Message 1'	
19	Adds an +1 to the age variable	Age now 5
20	Returns to the top of the while loop	
21	Evaluates the expression (condition of while) age < 5	Condition is false.
22		
23		
24	Jumps to the end of the while loop	
22	Calls the puts() procedure with the text 'Message 2'	

2. Assume that age has the value 8. List the actions the computer executes when it runs the following code.

```
puts('Message 0')

while (age > 5)

    puts('Message 1')

    age = age - 2

end

puts('Message 2')
```

Sequence	Action	Note
1	Calls the WriteLn procedure with the text 'Message 0'	
2	Evaluates the expression (condition of while) age > 5	Condition is true.
3	Jumps into the while loop	
4	Calls the puts() procedure with the text 'Message 1'	
5	Subtracts 2 from the age	Age now 6
6	Returns to the top of the while loop	
7	Evaluates the expression (condition of while) age > 5	Condition is true.
8	Calls the puts() procedure with the text 'Message 1'	
9	Subtracts 2 from the age	Age now 4
10	Returns to the top of the while loop	
11	Evaluates the expression (condition of while) age > 5	Condition is false.
12	Jumps to the end of the while loop	
13	Calls the WriteLn procedure with the text 'Message 2'	

End of Task