# 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')

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| 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')

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| 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