**Recursive Tracing**

1. Dry run the following algorithm with the initial call PrintSequence(5). Clearly show the value of the parameter, n for each call and the final output.

Procedure PrintSequence(n)

Output(n)

n ← n - 1

If n > 1 Then

PrintSequence(n)

EndIf

EndProcedure

|  |  |
| --- | --- |
| n | Output |
|  |  |
|  |  |
|  |  |
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|  |  |

Final Output:

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|  |  |
| --- | --- |
| n | Output |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Final Output:

1. Dry run the following recursive function with the initial call DoSomething(5, 2)

Function DoSomething(x, y)

If x = 1 Then

Return y

Else

Return DoSomething(x - 1, x + y)

EndIf

EndFunction

|  |  |  |
| --- | --- | --- |
| x | y | Return value |
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Final answer:

1. When the following function is called with DoSomething(18), the value 4 is returned.

Dry run the algorithm to work out what will be returned by DoSomething(100)

Function DoSomething(n)

If n = 1 Then

Return 0

Else

Return 1 + DoSomething(n DIV 2)

EndIf

EndFunction

|  |  |
| --- | --- |
| n | Return value |
|  |  |
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Final answer: