Question 1

1 / 1 pts

Consider the following Hack Assember code:

```
(LOOP)
  0 @curr
  1 MD=M+1
  2 @last
  3 D=M-D
  4 @END
  5 D;JLE
  6 @curr
  7 A=M
  8 D=M
  9 @curr
 10 M=D
 11 @min
 12 D=D-M;
 13 @LOOP
 14 D;JMP
(END)
 15 @END
 16 0;JMP
```

pre-defined : R0 - 15
curr : 16
last : 17
min : 18

Match entries that would appear in the Assember's symbol table for this code with their corresponding values.

Correct!	LOOP	0
Correct!	curr	16
Correct!	last	17
Correct!	END	15
Correct!	min	18
Correct!	D	Not in Symbol Table
Correct!	JMP	Not in Symbol Table

Other Incorrect Match Options:

- 11
- 3
- 10
- 1
- 9
- 5
- 2
- 20
- 6
- 4

- 20
- 6
- 4
- 19
- 12
- 7
- 13
- 8
- 14

Question 2

0.83 / 1 pts

The Hack Virtual Machine assumes values are represented in a particular way. Match the following to their representation or value.

Correct!	integer	16-bit 2's complement
Correct!	pointer	memory address
Correct!	true	-1
Correct!	false	0
Correct!	most negative integer value	-32768
You Answered	largest integer value	-32767

-2^{n-1} to $2^{n-1}-1$

-2^{16-1} to $2^{16-1}-1$

-32768 to 32767

Correct answer 32767

Other Incorrect Match Options:

- 65536
- -32767
- 65535
- -65536
- 16-bit unsigned
- 1
- 32-bit 2's complement
- -65535
- 8-bit unsigned
- 32768

Question 3

0.5 / 1 pts

Why are stacks drawn growing downwards in the textbook and on the lecture slides?

Correct!

- [x] So that the text book and lecture slides are consistent.
- [ ] They are not drawn this way.
- [ ] The stack in the Hack computer grows from high addresses to low addresses.

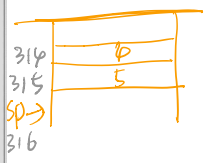
Correct answer

- [ ] Stacks in real computers grow from high addresses to low addresses.

Question 4

1 / 1 pts

Assume that we have a stack where the value of the top element is 5 and the second top element is 4. If the value 5 is stored at memory address 315, what is the value of the stack pointer and at what memory address is the value 4 stored?



Correct!

Stack Pointer 316

Correct!

4 is stored at address 314

Other Incorrect Match Options:

- 315
- 312
- 317
- 0
- 313
- 318

Question 5

1 / 1 pts

Assume that we have a stack where the value of the top element is 7 and the second top element is 3. If the VM command ***add*** is executed, and the value 3 is stored at memory address 768, what is the new value of the stack pointer?

- 0
- 768
- 771
- 770
- 767

Correct!

- 769