

C Pointers and Pointer Arithmetic Worksheet

Use the following memory diagram and initializing code. For each of the following expressions give both the data type of the entire expression and the value of each (if an expression is impossible simply enter “error”). Remember an int is 4 bytes and a pointer is 8 bytes for this worksheet.

<u>Name</u>	<u>Address</u>	
var1	0xf120	int var1 = 20;
var2	0xf124	int var2 = 150;
var3	0xf128	int *var3 = &var1;
var4	0xf130	int *var4 = &var1;

Draw the memory map for the stack below

<u>Expression</u>	<u>Type</u>	<u>Value</u>
$\ast(\&\text{var2})$		
$\& (\ast\text{var3})$		
$(\ast\text{var3}) - 1$		
$\&\text{var3}$		
$\text{var3} = \text{var3} + 1$		
$\ast\text{var3}$		
$\ast\text{var3} = \ast\text{var3} + 1$		
$\text{var3} = \text{var3} + 1$		
$\ast\text{var3}$		
$\& (\ast\text{var2})$		