Addressing Modes Example

NO	INSTRUCTION	CS offsets
1.	MOV BX, 09H	0003H
2.	CALL BX	0005H
3	MOV AX, 0CH	0007H
4.	MOV DX, 0003H	0009H
5.	PUSH DX	000BH
6.	RET	000CH

Assume DS = 5555h, SS = 3200h, CS = 2000h, DI = 3467h, SP = 2766h.
Now, answer all the questions below according to the table.

1. Determine the **addressing mode** of instruction No. 6 and after executing instruction No 6. deduce the **starting physical address** of the next instruction that will be pointed for execution with necessary calculations. [Hint: In usual case **RET** returns the IP to the location where '**CALL**'ed]

Solution: After the No.2 call instruction stack was pushed with 0005h for return. then the program jumped to the CS*10h+09h location, 20000h+09h = 20009h location [Logical address 2000:0009h], As, in the table all the offsets are of CS therefore it jumped to the instruction no.4. After executing line No.4 and 5. The stack was again pushed with 0003h.

As, the SP indicates the value 0003h. Finally, while executing the line No.6 for RET instruction it was suppose to pop the returning offset from the stack which was initially 0005h but because of the second push it will pop 0003h and will return to CS*10h+ 0003h = 20003h location [Logical address 2000:0005h], Instruction No.1.