

Time to Tear Down the Stack Frame

Time for Step 3: **tear down the stack frame.**

A function's code consists of four parts:

1. set up the stack frame,
2. execute the statements,
3. tear down the stack frame (leaving the return address on the stack with LC-3),
4. and return (RET).

Stack Appearance Before Tearing Down Stack Frame

Here's the stack frame during execution of the statements in `find_abs`.

R5, R6 →	local var. (<code>abs_value</code>)	R5+0
	previous frame pointer	R5+1
	return address	R5+2
	return value	R5+3
	parameters (<code>num</code>)	R5+4
	main's stack frame	

Stack Appearance After Tearing Down Stack Frame

We need to **pop down to the return value** and **reset R5 to main's frame pointer.**

R5, R6 →	local var. (<code>abs_value</code>)
	previous frame pointer
	return address
R6 →	return value
	parameters (<code>num</code>)
R5 →	main's stack frame

Restore Return Address from the Stack Frame

`LDR R7, R5, #2`

First, restore R7 from the stack frame.

Is there an LC-3 instruction for that?

Note: always the same offset from R5.

What are the base register and offset?