W3

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1 Exercise 1

1.1 a

When f(a, b, c) returns, it returns $7 + 3 + 12 = 22$. Thus when call-by-value is used, $r = 22$ x and y remain unchanged in the calling function. The reason is that call-by-value creates a copy of the variables to be used in the called function, thus leaving the variables unchanged in the calling function.

1.2 b

When call-by-reference is used, the variables in the calling function are modified, thus x to be first 7 then subsequently changing x again to be 12. y is changed to 3.

1.3 c

When call-by-value-result is used, the variables are only changed when the called function returns, leaving the values in the calling function unchanged (as such, x would only change once rather than twice, as with call-by-reference. Thus x and y would be modified to 12 and 3 respectively.

2 Exercise 2

2.1 a

It would print 5 twice as g() has no access to the local $x's$, but only to the global.

2.2 b

It would print 4 and 9, as g() does have access to the local variables.

2.3 c

By editing in the `TpInterpret.sml` somewhere between line 226 and 285. I'm unsure where.

3 Exercise 3

3.1 a

3.2 b

3.3 c