Assembly Exercise

1) In the box on the right, we have given the Assembly language version of a simple program. Assemble the program into machine code and determine the location addresses

2) What instruction is missing from this program?

3) What is the effect of the program on the registers and RAM concerned?

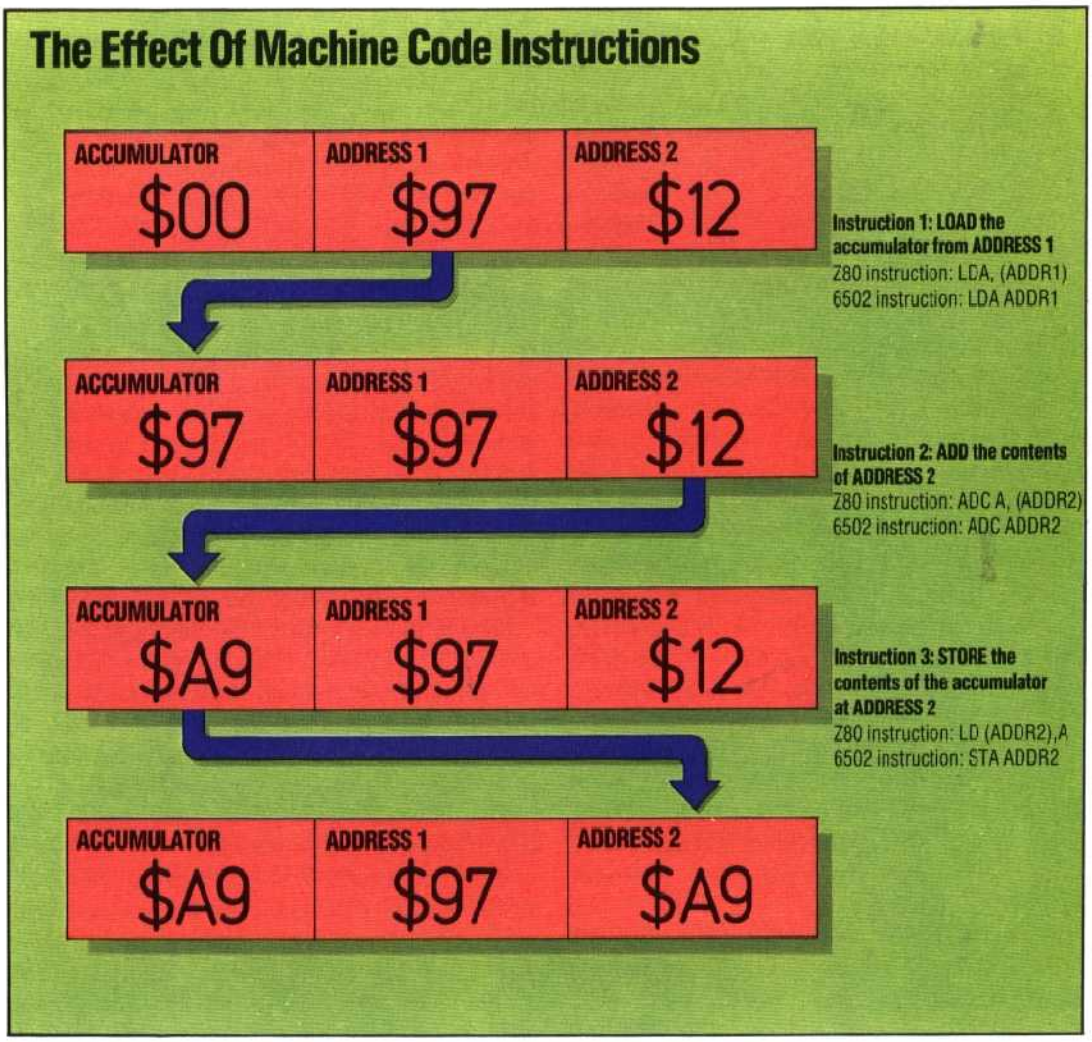
4) What does the term 'immediate data' mean? What other kinds of data could there be?

5) If BYTE1 in the program is treated as an address, on which page of RAM does it appear?

N.B. The values given in this program are for example only: if you wish to execute it, then you must choose locations and values suitable to your machine

Location Address	Machine Code	Assembly Language		
6502				
		START	EQU	$A000
		BYTE1	EQU	$45
		BYTE2	EQU	$38
			ORG	START
			LDA	#BYTE1
			CLC	
			ADC	#BYTE1
			STA	BYTE1
			ADC	#BYTE2
			STA	BYTE2
Z80				
		START	EQU	$A000
		BYTE1	EQU	$45
		BYTE2	EQU	$38
			ORG	START
			LD	A,BYTE1
			AND	A
			ADC	A,BYTE1
			LD	(BYTE1),A
			ADC	A,BYTE2
			LD	(BYTE2),A

The Effect Of Machine Code Instructions



The effect of data transfer instructions, such as LDA ADDR1 or LD (ADDR2),A, is always to copy the contents of the source location into the destination location. This location's contents are therefore overwritten; the source location is unaffected by the data transfer