Solution

Register	rr
X	00
Y	01
SP	10
PC	11

Postbyte for 5-bit Offset: rr0nnnnn

Postbytes for 9-bit Offset: 111rr00n nnnnnnnn

Postbytes for 16-bit Offset: 111rr010 nnnnnnnn nnnnnnnn

1. Convert the program below to a listing file. Complete the addresses and contents columns. You do **not** need to repeat the source code.

				Addresses	Contents
limit	EQU	65			
	ORG	$3000			
length	DC.B	36		3000	24
grades	DC.W	$3100		3001	31 00
count	DS.B	1		3003	—
	ORG	C000h			
	LDX	grades		C 000	FE 30 01
	CLR	count		C 003	79 30 03
	LDAB	#limit		C 006	C6 41
	LDAA	length		C 008	B6 30 00
again	BEQ	done		C 00B	27 0B
	CMPB	0,x		C 00D	E1 00
	BLO	skip		C 00F	25 03
	INC	count		C 011	72 30 03
skip	INX			C 014	08
	DECA			C 015	43
	BRA	again		C 016	20 F3
done	SWI			C 018	3F

List the symbols and their values below:

again : 0000 C00B

Count : 0000 3003

done : 0000 C018

grades : 0000 3001

Length : 0000 3000

limit : 0000 0041

skip : 0000 C014