Q1

(a) Register addressing mode
Effective address: R3

(b) Register indirect addressing mode
Effective address: 512

(c) Base with index addressing mode
Effective address: 896

(d) Absolute addressing mode
Effective address: LOC

(e) Index addressing mode
Effective address: 256

Q2

(a) $(0011)_2 + [-(0100)_2] = (0011)_2 + (1100)_2 = (1111)_2 = (-1)_{10}$
Set N and clear others

(b) $(0001)_2 + [-(0001)]_2 = (0001)_2 + (1111)_2 = (10000)_2 = (0000)_2 = (0)_{10}$
Set Z and clear others

(c) $(0011)_2 + [-(1010)]_2 = (0011)_2 + (0110)_2 = (1010)_2 = (-6)_{10}$
Set N, V and clear others

(d) $(1111)_2 + [-(0001)]_2 = (1111)_2 + (1111)_2 = (11110)_2 = (1110)_2 = (-2)_{10}$
Set N and clear others

(e) $(1001)_2 + [-(0011)]_2 = (1001)_2 + (1101)_2 = (10110)_2 = (0110)_2 = (6)_{10}$
Set V and clear others

(f) $(0111)_2 + [-(0110)]_2 = (0111)_2 + (1010)_2 = (10001)_2 = (0001)_2 = (1)_{10}$
Clear all condition code flags

Q3

Label	OpCode	Operand	Comment
	Load	R2, N	Load the size of the list.
	Clear	R3	Initialize sum to 0.
	Move	R4, addr NUM1	Get address of the last number.
LOOP:	Load	R5, (R4)	Get the nexxt number.
	Add	R3, R3, R5	Add this number to sum.
	Subtract	R4, R4, #4	Decrement the pointer to the list.
	Subtract	R2, R2, #1	Decrement the counter.
	Branch_if_[R2]>0	LOOP	Branch back if not finished.
	Store	R3, SUM	Store the final sum.