

Store the result in memory. What will be the result of the operation?

Solution:

Org. \$200
 1000 input
 adda input
 sta sum
 swi

Org. \$1000
 input: dc.b \$89
 input: dc.b \$3C
 sum: ds.b 1

No sum to \$C5

89
 3C
 05C5

8	1000	F
9	1001	D
10	1010	D
11	1011	C
12	1100	D
13	1101	D
14	1110	D
15	1111	F

QUIZ I

1/16/15

Write an assembly program to compute the ^{SUM} average of the 2 unsigned numbers; \$89 and \$3C, and store the result in memory. What will be the result of this operation?

Solution:

```

org $2000
ldaa input1
adda input2
staa sum
swi
    
```

$$\begin{array}{r} 89 \\ + 3C \\ \hline 05C5 \end{array}$$

So sum is \$C5

8	1000	8
9	1001	9
A	1010	10
B	1011	11
C	1100	12
D	1101	13
E	1110	14
F	1111	15

```

org $1000
input1: dd.b $89
input2: dc.b $3C
sum: ds.b 1
    
```

3-0235 — 50 SHEETS — 5 SQUARES
 3-0236 — 100 SHEETS — 5 SQUARES
 3-0237 — 200 SHEETS — 5 SQUARES
 3-0137 — 200 SHEETS — FILLER

COMET

Write an assembly program to sum 3 unsigned numbers and divide the sum by 4. You may leave the result in the accumulator. These numbers are \$46, \$B2, \$5C.

Solution

```

org $1000
ldaa #$46
adda #$B2
adda #$5C
lsla
lsla
swi
    
```

$$\begin{array}{r}
 + 46 \\
 + B2 \\
 \hline
 F8 \\
 + 5C \\
 \hline
 \underline{154}
 \end{array}$$

$$\begin{array}{r}
 0101 \ 0100 \\
 0010 \ 1010 \\
 0001, 0101 \rightarrow \underline{\underline{15}}
 \end{array}$$

3-0235 — 50 SHEETS — 5 SQUARES
 3-0236 — 100 SHEETS — 5 SQUARES
 3-0237 — 200 SHEETS — 5 SQUARES
 3-0137 — 200 SHEETS — FILLER

COMET

QUIZ III

1/30/15

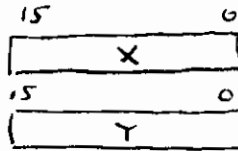
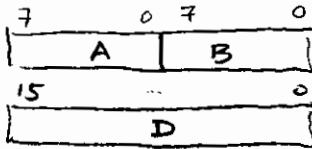
You are given the following set of instructions and need to indicate the values of the registers after each instruction is executed, and its addressing mode.

3-0235 — 50 SHEETS — 5 SQUARES
 3-0236 — 100 SHEETS — 5 SQUARES
 3-0237 — 200 SHEETS — 5 SQUARES
 3-0137 — 200 SHEETS — FILLER

Instruction	A	B	X	Y	Effective Address	Description
	30	A1	2033	1AB0		
ldx \$200B	30	A1	2003	1AB0	Extended	(M:M+1) ⇒ X
ldd 2,+X	18	06	2005	1AB0	Indexed	(M:M+1) ⇒ A:B
aba	1E	06	2005	1AB0	Inherent	(A)+(B) ⇒ A
ldy \$0030	1E	06	2005	?	Direct	(M:M+1) ⇒ Y

COMET

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0xrow	FE	20	0D	EC	24	18	06	7B	21	03	16	20	03	21	00	01



18
 06
 1E

No calculators allowed!!

2/6/15

Consider the following program:

org \$2000

ldab #129
 addb #F1
 ldab #2
 subb #FA

Instruction NZVC Flags
 1. (M) ⇒ B ΔΔΔ- Δ: affected by oper.
 2. (B) + (M) ⇒ B ΔΔΔΔ Δ: cleared by oper.
 3. (M) ⇒ B ΔΔΔ- -: not affected
 4. (B) - (M) ⇒ B ΔΔΔΔ

swi

Compute the value of B after each instruction as well as the value of the NZVC flags.

Instruction	B	N	Z	V	C
ldab #81	\$81	1	0	0	?
addb #F1	\$72	0	0	1	1
ldab #02	\$02	0	0	0	1
subb #FA	\$08	0	0	0	0

15 comp

0	F
1	E
2	D
3	C
4	B
5	A
6	9
7	8

$$\begin{array}{r} 8 \\ 16 \overline{) 129} \\ \underline{16} \\ 01 \leftarrow 8 - \$81 \end{array}$$

Addition (V)
 P + P = N
 N + N = P

Subtract (V)
 N - P = P
 P - N = N

$$\begin{array}{r} \$81 \\ \underline{\$F1} \\ \$72 \end{array} \quad \begin{array}{r} \$02 \\ - \$FA \\ \hline \end{array} \rightarrow \begin{array}{r} + \$02 \\ \underline{\$06} \\ \$08 \end{array}$$

$$\begin{array}{r} 2 \\ 15 \\ \underline{8} \\ 25 \end{array}$$

3-0235 - 50 SHEETS - 5 SQUARES
 3-0236 - 100 SHEETS - 5 SQUARES
 3-0237 - 200 SHEETS - 5 SQUARES
 3-0137 - 200 SHEETS - FILLER

COMET