

# HW2

Monday, February 10, 2020 8:54 PM

1.a. 18  $\begin{array}{r} 10010 \\ 16 \quad 2 \end{array} \rightarrow \boxed{0001 \ 0010_6}$

1.b. 35  $\begin{array}{r} 100011 \\ 32 \quad 21 \end{array} \rightarrow \boxed{0010 \ 0011_6}$

1.c. 327  $\begin{array}{r} 101000111 \\ 256 \ 64 \ 41 \end{array} \rightarrow \boxed{0001 \ 0100 \ 0111_6}$

$$327 - 256 = 71 - 64 = 7$$

2.a. 0011 0101

$$\begin{matrix} 3 & 5 \end{matrix}$$

$$\boxed{0x35}$$

2.b. 0000 1011

$$\begin{matrix} 0 & 8 \end{matrix}$$

$$\boxed{0x0B}$$

2.c. 0010 0101

$$\begin{matrix} 2 & 5 \end{matrix}$$

$$\boxed{0x25}$$

3.a. 0111 0101  $(1 \times 2^6) + (1 \times 2^5) + (1 \times 2^4) + (1 \times 2^2) + (1 \times 2^0) = \boxed{117}$

3.b. 1000 1011  $(1 \times 2^7) + (1 \times 2^3) + (1 \times 2^1) + (1 \times 2^0) = \boxed{139}$

3.c. 1110 0101  $(1 \times 2^7) + (1 \times 2^6) + (1 \times 2^5) + (1 \times 2^2) + (1 \times 2^0) = \boxed{229}$

4.a. 1011 0101  $-(1 \times 2^7) + (1 \times 2^5) + (1 \times 2^4) + (1 \times 2^2) + (1 \times 2^0) = \boxed{-75}$

4.b. 1000 1011  $-(1 \times 2^7) + (1 \times 2^3) + (1 \times 2^1) + (1 \times 2^0) = \boxed{-117}$

4.c. 0110 0101  $(1 \times 2^6) + (1 \times 2^5) + (1 \times 2^2) + (1 \times 2^0) = \boxed{101}$

5.a. 0x002b  $(2 \times 16^1) + (6 \times 16^0) = \boxed{38}$

5.b. 0x1234  $(1 \times 16^3) + (2 \times 16^2) + (3 \times 16^1) + (4 \times 16^0) = \boxed{4660}$

$$5.b. 0x1234 \quad (1 \times 16^3) + (2 \times 16^2) + (3 \times 16^1) + (4 \times 16^0) = 4660$$

$$5.c. 0xFF10 \quad (15 \times 16^3) + (15 \times 16^2) + (1 \times 16^1) + (0 \times 16^0) = 65296$$

2.1 addi \$t0, \$t1, -5

add \$t2, \$t3, \$t0

2.2 \$t4 = \$t1 + (\$t2 + \$t3)

2.3 sub \$t0, \$t3, \$t4

sll \$t0, \$t0, 2

lw \$t1, 0(\$t0)

add \$t1, \$t1, \$t0

lw \$t1, 0(\$t1)

sw \$t1, 32(\$t7)

2.4 # \$t2 = \$t0 + 4;

# \$t0 = \$t2;

# \$t0 = \$t0 + \$t;

# \$t1 = \$t0;

2.10 \$t0 = A[0] + 4;

\$t1 = A[0] + \$t;

2 \$t0 = \$t1;

\$t0 = 2 \$t0;

\$t = \$t0 + \$t1;