

2. a)  $0000\underline{1110}$

hexadecimal:  $8 + 4 + 2 = 14 = \boxed{E}_{16}$

decimal:  $2^3 + 2^2 + 2^1 = \boxed{14}_{10}$

b)  $\overset{2^7}{1}\overset{2^6}{0}\overset{2^5}{0}\overset{2^4}{0}\overset{2^3}{0}\overset{2^2}{0}\overset{2^1}{0}\overset{2^0}{1}$   
 $\underline{1000}\underline{0001}$

hexa:  $\boxed{81}_{16}$

dec:  $\boxed{129}_{10}$

$1000 = 8$

$0001 = 1$

$\rightarrow 2^7 + 2^0 = 128 + 1 = 129$

c)  $\overset{2^7}{1}\overset{2^6}{0}\overset{2^5}{0}\overset{2^4}{1}\overset{2^3}{1}\overset{2^2}{0}\overset{2^1}{0}\overset{2^0}{1}$   
 $\underline{1001}\underline{1001}$

hexa:  $\boxed{99}_{16}$

dec:  $\boxed{153}_{10}$

$1001 = 8 + 1 = 9$

$1001 = 8 + 1 = 9$

$2^7 + 2^4 + 2^3 + 2^0$

$128 + 16 + 8 + 1 = 153$