题目 1

	little-endian	big-endian
show_bytes(valp,1)	0x33	0x14
show_bytes(valp,2)	0x3302	0x140A
show_bytes(valp,4)	0x33020A14	0x140A0233

题目 2

Fractional value	Binary representation	Decimal representation
$\frac{1}{8}$	0.001	0.125
$\frac{3}{4}$	0.110	0.75
$\frac{43}{16}$	10.1011	2.6875
$\frac{25}{16}$	1.1001	1.5625
$\frac{51}{16}$	11.0011	3.1875

题目 3

(a) $5 = 101b = 2^2 \times 1.01b$

$\therefore$ 位表示为$s = 0, exp = 2 + bias = 1 + 2^{k-1}, frac = 0.25$

即 0 10...01 0100...0

(b) 最大奇数整数的 $E = min(n, 2^{k-1} - 1), V = 2^{E+1} - 1, M = 2 - 2^{-E}, f = 1 - 2^{-E}$

$\therefore$ 位表示为$s = 0, exp = E + bias = \begin{cases} n + 2^{k-1} - 1 & E = n \\ 2^k - 2 & E = 2^{k-1} - 1 \end{cases}$

$frac = 11...100...0b$(前 E 位为 1，后 n-E 位为 0)

(c) 最小正规范化值为 2^{1-bias}

$\therefore$ 其倒数的$E = bias - 1, M = 1, f = 0, V = 2^(bias - 1)$

$\therefore$ 位表示为$s = 0, exp = E + bias = 2^k - 3, frac = 0$

即 0 11...101 00...0

题目 4

Format A		Format B	
Bits	Value	Bits	Value
1 01110 001	$-\frac{9}{16}$	1 0110 0010	$-\frac{9}{16}$
0 10110 101	208	0 1110 1010	208
1 00111 110	$-\frac{7}{1024}$	1 0000 0111	$-\frac{7}{1024}$
0 00000 101	$\frac{5}{131072}$	0 0000 0001	$\frac{1}{1024}$
1 11011 000	-4096	1 1110 1111	-248
0 11000 100	768	0 1111 0000	$+\infty$