2	58	1
2	29	0
2	14	1
2	7	0
2	3	1
2	1	1
	0	1

(b) convert to base 10
$(3345)_6 = 3\times6^3+3\times6^2+4\times6^1+5\times6^0 = 648+108+24+5$
$=(785)_{10}$
convert to base 2

2	785	
2	392	1
2	196	0
2	98	0
2	49	0
2	24	1
2	12	0
2	6	0
2	3	0
2	1	1
	0	1

$=(1100010001)_2$

(c) convert to base 10
$(875)_9 = 8\times9^2+7\times9^1+5\times9^0 = 648+63+5$
$=(716)_{10}$
convert to base 11

11	716	
11	65	1
11	5	10
	0	5

$=(5\ 10\ 1)_{11}$

(d) $(0.3212)_4 = 3\times4^{-1}+2\times4^{-2}+1\times4^{-3}+2\times4^{-4}$
$=\frac{3}{4}+\frac{2}{16}+\frac{1}{64}+\frac{2}{256}$
$=\frac{230}{256}=(\frac{115}{128})_{10}$

(e) convert to base 10
$(87.35)_9 = 8\times9^1+7\times9^0+3\times9^{-1}+5\times9^{-2}$
$=72+7+3/9+5/81$
$=(79\frac{3}{9}\frac{2}{81})_{10}$

convert to base 11

11	79	
11	7	2
	0	7

.395
x 11
4.345
x 11
3.795
x 11
8.745
x 11
7.995
x 11
10.945
x 11
10.395
x 11
4.345 *repeats

$=(72.\overline{4387\ 10\ 10})_{11}$

1.9 (a) $\underset{2}{\underline{10}}\ \underset{3}{\underline{11}}\ \underset{1}{\underline{01}}\ \underset{0}{\underline{00}}\ .\ \underset{0}{\underline{00}}\ \underset{2}{\underline{10}}\ \underset{2}{\underline{10}}$
$=(2310.022)_4$

(b) $\underset{2}{\underline{010}}\ \underset{5}{\underline{10\ 1}}\ \underset{3}{\underline{011}}\ \underset{0}{\underline{000}}\ \underset{5}{\underline{1\ 01}}\ \underset{0}{\underline{00\ 0}}\ \underset{3}{\underline{011}}$ (A B 1 4 3)
$=(2530503)_8$

(c) $\underset{4}{\underline{010\ 0}}\ \underset{E}{\underline{11\ 10}}\ \underset{7}{\underline{0\ 111}}\ .\ \underset{9}{\underline{100\ 1}}\ \underset{4}{\underline{01\ 00}}$ (2 3 4 7 . 4 5)
$=(4E7.94)_{16}$

(d) $\underset{1}{\underline{0001}}\ \underset{B}{\underline{1011}}\ \underset{E}{\underline{1110}}\ .\ \underset{4}{\underline{0100}}\ \underset{1}{\underline{0001}}\ \underset{8}{\underline{1000}}$
$=(1BE.418)_{16}$

1.10 $(130)_x=(28)_{10}$
$1*x^2+3*x+0*x^0 = 2*10+8*10^0$
$\rightarrow x^2+3x-28=0$
$\rightarrow (x-4)(x-7)=0$
$x=4$ or $x=-7$
We pick up $x=4$ since x is positive.

1.11 (a)
$$\begin{array}{r} 11101 \\ +\ 1111 \\ \hline 101100 \\ +\ 1011 \\ \hline 110111 \end{array}$$

(b)
$$\begin{array}{r} 111000 \\ -10101 \\ \hline 100011 \end{array}$$