1. $(11101.1011)_2$

$2^4 + 2^3 + 2^2 + 2^1 + 2^0 = 1 \times 2^{-1} + 2^{-2} + 2^{-3} + 2^{-4}$

$16 + 8 + 4 + 1 + \frac{1}{2} + \frac{1}{8} + \frac{1}{16} = 29.625$

2. $(651.7)_8$

$= 6 \times 8^2 + 5 \times 8^1 + 1 \times 8^0 - 7 \times 8^{-1} =$

$384 + 40 + 1 + 0.875 \cdot 2 \quad (425.875)_{10}$

3. $(EF9.B)_{16}$

$= 14 \times 16^2 + 15 \times 16^1 + 9 \times 16^0 + 11 \times 16^{-1} = (3833.6875)$

4. $(57)_{10}$

$= \begin{array}{r|r|l} 2 & 57 & \\ 2 & 28 & 1 \\ 2 & 14 & 0 \\ 2 & 7 & 0 \\ 2 & 3 & 1 \\ 2 & 1 & 1 \end{array}$

$= (111001)_2$

5. $(0.54379)_{10}$

.54379
× 2
‾‾‾‾‾‾‾
.08758
× 2
‾‾‾‾‾‾‾
0.17516

.17516
× 2
‾‾‾‾‾‾‾
0.35032
× 2
‾‾‾‾‾‾‾
0.70064
× 2
‾‾‾‾‾‾‾
1.40128

.0.40128
× 2
‾‾‾‾‾‾‾
0.80256
× 2
‾‾‾‾‾‾‾
1.60512

1.0001011001101(0)

0.60512	0.84096	0.72768
× 2	× 2	× 2
1.21024	1.68192	1.45536
0.21024	0.68192	0.45536
× 2	× 2	× 2
0.42048	1.36384	0.91072
× 2	0.36384	
0.84096	× 2	
	0.72768	

$$= (0.10001011001101\underline{0})_2$$

6 $(0.7425)_{10}$

$$= (\cancel{0.110011100010101001})_2$$

7

.79425	0.705
× 2	× 2
1.5885	1.416
0.5885	0.416
× 2	× 2
1.0177	0.832
0.0177	
× 2	
0.354	
.354	
× 2	
0.708	

$$= (0.110010)_2$$

7. $(0.7890625)_{10}$

0.7890625
× 2
‾‾‾‾‾‾‾
1.578125

0.578125
× 2
‾‾‾‾‾‾‾
1.15625

0.15625
× 2
‾‾‾‾‾‾‾
0.3125

0.3125
× 2
‾‾‾‾‾
0.625

0.625
× 2
‾‾‾‾‾
1.25

0.25
× 2
‾‾‾‾
0.5

0.5
× 2
‾‾‾‾
1.0

$= (0.1100101)_2$

8. $(57.5437\varphi)_{10}$

2 | 57
2 | 28   1
2 | 14   0
2 | 7   0
2 | 3   1
2 | 1   1

$(111001)_2$

0.5379 × 2 = 1.0758
0.0875 × 2 = 0.17516
0.17516 × 2 = 0.35032
0.35032 × 2 = 0.70064
0.70064 × 2 = 1.40128

= 10001

$(111001.10001)_2$

9. $(543.815)_{10}$

$543 / 8 = 67$ rem 7

$67 / 8 = 8$ rem 3

$8 / 8 = 1$ rem 0

$1 / 8 = 0$ rem 1 $(2077)_8$

$0.815 \times 8 = 6.52$ (6)

$0.52 \times 8 = 4.16$ (4) (2077.64127)

$0.16 \times 8 = 1.28$ (1)   8

0.28×2.24 (2)   ——

$0.24 \times 8 = 1.92$ (1)

$0.92 \times 8 = 7.36$ (2)

10. $(683.275)_{10}$

$683 / 16 = 42$ (11) B

$42 / 16 = 2$ (10) A

$2 / 16 = 0$ (2) $= (2AB)_{16}$

$0.275 \times 16 = 4.4$ (4)

$0.4 \times 16 = 6.4$ (6) $(2AB.466_{16})$

$0.4 \times 16 = 6.4$ (6)

$0.4 \times 16 = 6.4$ (6)

11) $(110111011111001.011111)_2$

~~1101~~ 1 101 110 .111 001

$(1 \quad 5 \quad 6 \quad 7 \quad 1)_8$

$0.011111 = (0.0774)_8$

$0.0774 \times 8 = 0.6192$

$0.6192 \times 8 = 4.9536$

$0.9536 \times 8 = 7.6288$

$0.6288 \times 8 = 5.0304 \quad (5)$

$= 15671.475_8$

12) $(527.64)_8$

$5_8 = 101_2$

$2_8 = 010_2$

$7_8 = 111_2$

$6_8 = 110_2$

$4_8 = 100_2$

$= 101010111.110100_2$

13 $(\cdot 1000 \cdot 1101 \cdot 1001 \cdot 0101l)_2$

$(8D79 \cdot 2B)_{16}$

14 $(\cdot A9C7 \cdot BD)_{16}$

$= (101010011100011l \cdot 10111101)_2$