**1) 321 in decimal is 101000001 in binary, 501 in octal, and 141 in hexadecimal.**Binary

321/256 = 1 with a remainder of 65 and 256 = 28

65/64 = 1 with a remainder of 1 and 64 = 26

1/1 is of course 1 and 1 is 20

Octal

321/64 = 5 with a remainder of 1 and 64 = 82

1/1 is one, and one is 80

Hexadecimal

321/256 = 1 with a remainder of 65, and 256 is 162

159/16 = 4 with a remainder of 1, and 16 is 161

1/1 = 1 and 1 is 160

**2) 1342 is 10100111110 in binary, 2476 in octal, and 53E in hexadecimal**Binary

1342/1024 = 1 with a remainder of 318, and 1024 is 210

318/256 = 1 with a remainder of 62, and 256 is 28

62/32 = 1 with a remainder of 30, and 32 is 25

30/16 = 1 with a remainder of 14, and 16 is 24

14/8 = 1 with a remainder of 6, and 8 is 23

6/4 = 1 with a remainder of 2, and 4 is 22

2/2 = 1 with no remainder, and 2 is 21

Octal

1342/512 = 2 with a remainder of 318, and 512 is 83

318/64 = 4 with a remainder of 62, and 64 is 82

62/8 = 7 with a remainder of 6, and 8 is 81

6/1 = 6 with no remainder

Hexadecimal

1342/256 = 5 with a remainder of 62, and 256 is 162

62/16 = 3 with a remainder of 14 and 16 is 161

14/1 = 14, or E in hexadecimal

**3) 663241 is 10100001111011001001 in binary, 2417311 in octal, and A1EC9 in hexadecimal**

Binary

663241/524288 = 1 with a remainder of 138953, and 663241 is 219

138953/131072 = 1 with a remainder of 7881, and 131072 is 217

7881/4096 = 1 with a remainder of 3785, and 4096 is 212

3785/2048 = 1 with a remainder of 1737, and 2048 is 211

1737/1024 = 1 with a remainder of 713, and 1024 is 210

713/512 = 1 with a remainder of 201, and 512 is 29

201/128 = 1 with a remainder of 73, and 128 is 27

73/64 = 1 with a remainder of 9, and 64 is 26

9/8 = 1 with a remainder of 1, and 8 is 23

1/1 = 1

Octal

663241/262144 = 2 with a remainder of 138953, and 262144 is 86

138953/32768 = 4 with a remainder of 7881, and 32768 is 85

7881/4096 = 1 with a remainder of 3785, and 4096 is 84

3785/512 = 7 with a remainder of 201, and 512 is 83

201/64 = 3 with a remainder of 9 and 64 is 82

9/8 = 1 with a remainder of 1, and 8 is 81

Hexadecimal

663241/65536 = 10 (A) with a remainder of 7881, and 65536 is 164

7881/4096 = 1 with a remainder of 3785, and 4096 is 163

3785/256 = 14 (E) with a remainder of 201, and 256 is 162

201/16 = 12 (C) with a remainder of 9

**4) 14A31 is 84529 in decimal and 10100100111110101 in binary**

14A31 is 1\*164+4\*163+10\*162+3\*161+1\*160

65536+16384+2560+48+1=84529

84529/65536 = 1 with a remainder of 18993, and 65536 is 216

18933/16384 = 1 with a remainder of 2549, and 16384 is 214

2549/2048 = 1 with a remainder of 501, and 2048 is 211

501/256 = 1 with a remainder of 245, and 256 is 28

245/128 = 1 with a remainder of 117, and 128 is 27

117/64 = 1 with a remainder of 53, and 64 is 26

53/32 = 1 with a remainder of 21, and 32 is 25

21/16 = 1 with a remainder of 5, and 16 is 24

5/4 = 1 with a remainder of 1, and 4 is 22

**5) FFFF is 65535 in decimal and 1111111111111111 in binary**

FFFF is (15\*163+15\*162+15\*16+15)

61440+3840+240+15=65535

65536 is 216, which is 10000000000000000, and 65535 is one less, so 1111111111111111