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1. Convert the following numbers into the specified base:

a) 35_{10} to binary (base 2) using successive division method:

$35/2 = 17\ R\ 1$
$17/2 = 8\ R\ 1$
$8/2 = 4\ R\ 0$
$4/2 = 2\ R\ 0$
$2/2 = 1\ R\ 0$
$1/2 = 0\ R\ 1$ ← start here

$35_{10} = 100011_2$

c) 707_8 to binary (base 2) using the Binary Grouping method:

7 0 7
4 2 1 4 2 1 4 2 1
1 1 1 0 0 0 1 1 1

$707_8 = 111000111_2$

b) 707_8 to decimal (base 10) using the Positional Notation Method:

$707_8 = 7(8^2) + 0(8^1) + 7(8^0)$
$= 7(64) + 0 + 7$
$= 448 + 0 + 7$

$707_8 = 455_{10}$

d) FFC_{16} to binary (base 2) using the Binary Grouping Method:

F	F	C
8 4 2 1	8 4 2 1	8 4 2 1
1 1 1 1	1 1 1 1	1 1 0 0

$FFC_{16} = 111111111100_2$

e) $3A2_{16}$ to octal (base 8) using the Binary Grouping Method:

3	A	2
2 1	8 4 2 1	2 1
1 1	1 0 1 0	1 0

$3A2_{16} = 1110101_2$

011 101 010

3 5 2

$3A2_{16} = 352_8$

Hex:
A = 10
B = 11
C = 12
D = 13
E = 14
F = 15
⋮ ⋮