Amélie Boucher et Vanessa Potvin Bujold

$7^4\ 7^3\ 7^2\ 7^1\ 7^0$

1- 1 6 5 4 3

$16^3\ 16^2\ 16^1\ 16^0$

- $2AA3_{16}$ -> $2\times16^3 + 10\times16^2 + 10\times16^1 + 3\times16^0 =$
  $2\times4096 + 10\times256 + 10\times16 + 3\times1 = 10915_{10}$

- $4B_{16}$ -> base 10 $\quad 4\times16^1 + 11\times16^0 = 75_{10}$

- $4B_{16}$ -> base 2
  75_{10} -> base 2

$75 - 64 = 11$ -> $2^6(64)$
$11 - 8 = 3$ $\quad 2^3(8)$
$3 - 2 = 1$ $\quad 2^1(2)$
$1 - 1 = 0$ $\quad 2^0(1)$

$\Rightarrow 1001011_2$

- $4B_{16}$ -> base 8
  75_{10} -> base 8

75 | 8
-72 | 9 | 8
3 | -8 | 1 | 8
1 | -0 | 0
1

$\Rightarrow 113_8$

- 1011_{10} -> 1011_{10} -> base 16

1011 | 16
-1008 | 63 | 16
3 | -48 | 3 | 16
15 | -0 | 0
3

$\Rightarrow 3F3 \Rightarrow 0x3F3$

- $0xee$ -> $14\times16^1 + 14\times16^0 = 238$

2) 17_{10} $n=5$

$17 \rightarrow 2^4(16) \rightarrow 10001_2$
-16 $\quad 2^0(1)$
1
-1
0

3) • $01101 \rightarrow 2^3 \times 1 + 2^2 \times 1 + 2^0 \times 1 = 13_{10}$

• $10011 \rightarrow 10011 = -13_{10}$
01100
$+ \quad 1$
01101

4)

S	e	f
1	11	52

$3.15 \rightarrow 3_{10} \rightarrow$ base 2
$3 \rightarrow 11_2$

$.15 \rightarrow$ base 2 $\rightarrow .00\overline{1001}\ldots_2$
$0.15 \times 2 = 0.30$
$0.30 \times 2 = 0.60$
$0.60 \times 2 = 1.20$
$0.20 \times 2 = 0.40$
$0.40 \times 2 = 0.80$
$0.80 \times 2 = 1.60$
$0.60 \times 2 = 1.20$
$0.20 \times 2 = 0.40$
$0.40 \times 2 = 0.80$
$0.80 \times 2 = 1.60$

Donc $11.00\overline{1001}\ldots_2$
$1.100\overline{1001}\ldots \times 2^1$ $\quad e = 1023+1 = 1024 = 2^{10} = 10000000000_2$

Donc : $S = 0$

$e = 10000000000$

$f = 1001\overline{001}...$

• -4 $S = 1$

$4_{10} \rightarrow 100_2 \rightarrow 1.00 \times 2^2$

$e = 1023 + 2 = 1025$

$1025 \rightarrow 2^{10}(1024) \rightarrow 10000000001_2$

-1024 $\quad 2^0(1)$

1

-1

0

$S = 1$ $\quad e = 10000000001$ $\quad f = 00...00$

5) $10 - ((2+3)-4) = 9$