Note Title 16-09-2011 operations point 2.3 Addition 10. 764 10.764 1) Align the decimal points.

1) Align Decimal Points

a) Shift the smaller number to the right s.t both the exponents

 $\begin{array}{c}
ma tch \\
(1.2) + (1.4) \\
0.2) \\
B
\end{array}$

2)

A+B

CPerform the addition

[Maintain some entra prevision beyond 23 bits]

Discard digits (Azy) onwards

Try to round N29
Example: =(10.0)b $= (1.0)_{b} \times 2'$

5) After roumding - my number might get
Un-normalized.
Renormalize.

Rounding

Assume that you wan? to round to the next integer.

4.5 = 4 4.4 = 4 4.6 = 5

Rounding Policies:

Round - Up: 4.1 -> 5

(+ix)

Round - Down: 4.9 (-00) -> 4

Truncate: 5.369 → 5

Round (complicated)

(+)ve Tranc = Round-Down (-)ve Tranc = Round-up

1.0.... 1.5 -> 1 1.50001 1.9999

Assume Implement round to next integer suing the complicated rounding

 $\mathcal{N} = \left\{ 1. \, \mathcal{X}_{2_1 - \cdots - n_n} \right\}_b$

$$(\gamma = = 0)$$

$$(\gamma = = 1)$$

complicated

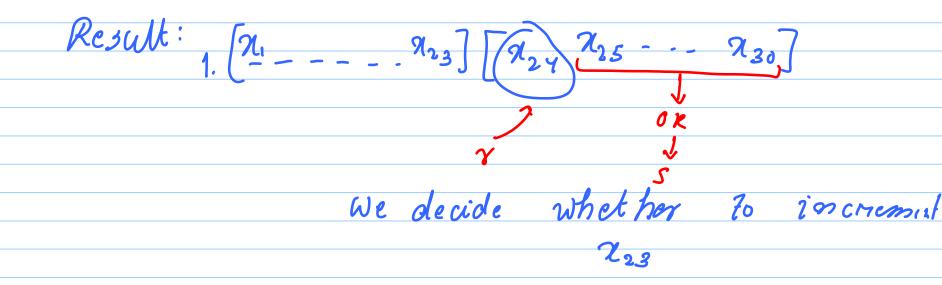
 $(\gamma = = 1) \{$ $S = \lambda_1 \mid \alpha_2 - \dots \mid \alpha_n \}$

$$\frac{(x_1|x_2,...,|x_n)}{f} = S$$
The second stricky bit sit

$$tf(s = = 0) \{ N = 0.1 \}$$

$$e(se if (s = = 1)) \{ N = (2)_{1}^{2}(10)_{1}^{2} \}$$

$$f(s = = 0) \{ N = 0.1 \}$$



Entra

Addition

Subtraction

1) Take a look at

sign bits.

2) De a sub or add

3) Set value of final sign bit

Division

1) Sign of the result

Maltiplication

1) Figure out
sign of the
result

2) Add the onponents

2) Subtract exponents

Floating Point Tricks Ts: 1.0000 Use double (52 bits) 1.0000 1+2-50

