

where $A=4490000$ & $B=42A0000$

- $A=0100010010010000000000000000$
- $B=0100001010100000000000000000$
- A & B are +ve numbers
- $E'_A = 89H = E_A = E'_A - 127 = 10$
- $M_A = 001000....$
- $E'B$

Add single precision floating point numbers A & B
where $A=4490000$ & $B=42A0000$

• $A=01000100100100000000000000000000$

• $B=01000010101000000000000000000000$

• A & B are +ve numbers

• $E'_A=89H=E_A=E'_A-127=10$

• $M_A=001000....$

• $E'_B=85H=E_B=E'_B-127=6$

• $M_B=01000...$

• $A=1.001*2^{10}$

• $B=1.010*2^6$

Floating point arithmetic: MUL rule

- Add the exponents.
- Subtract the bias. (127 in case of single precision & 1023 in case of d)
- Multiply the mantissas and determine the sign of the result.
- Normalize the result (if necessary).
- Truncate/round the mantissa of the result.

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Perform the multiplication of

A=36100000 B=D4100000

- A=00110110000100000000000000000000
- B=11010100000100000000000000000000
- A; S=0; E=6C=108(10); E=E'-127=108-127=-19
- A=+1.001*2⁻¹⁹
- B; S=1; E'=A8=168(10); E=E'-127=168-127=41
- B= -1.001*2⁴¹
- (-1.001*1.001)*2⁴¹⁻¹⁹=-1.010001*2²²
- 11001010101000100000.....
- CAA20000

Divide $A=36100000$ by $B=D4100000$

- $A=+1.001 \times 2^{-19}$
- $B=-1.001 \times 2^{41}$
- $1.001 / -1.001 \times 2^{-19-41} = -1.0000 \times 2^{60}$
- $E=-60; E'=127-60=67$
- $101000011000000000...$