Floating Point Addition

X: _____ + Y:_____

X: _ _ _ _   _ _ _ _   _ _ _ _   _ _ _ _   Y: _ _ _ _   _ _ _ _   _ _ _ _   _ _ _ _

Step 1: Extract the exponent and value

$Sign_X$:   _ $Sign_Y$:   _

Exp_X: _ _ _ _ _ _ _ _ Exp_Y: _ _ _ _ _ _ _ _

Val_X: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _ Val_Y: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _

2's Val_X: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _   2's Val_Y: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _

Step 2: Equalize the exponents

Value of Largest Exp: _____   X:__ or Y:__

Shift Direction: _____   Shift Amount: _____   X:__ or Y:__

New Val_: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _   X:__ or Y:__

Step 3: Integer addition

Val_X: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _

Val_Y: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _

Val_R: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _

Step 4: 2's comp to sign-magnitude

Mag_R: _ _ _ _ _*_ _ _ _ _ _ _ _ _ _ $Sign_R$:   _

Step 5: Normalize the result

Exp_R: _ _ _ _ _ _ _ _ $Sign_R$:   _

Mag_R: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _

Norm Mag_R: _ _ _ _ _ _ _ _ _*_ _ _ _ _ _ _

Norm Exp_R: _ _ _ _ _ _ _ _

Step 6: Reassemble components

$Sign_R$:   _

Exp_R: _ _ _ _ _ _ _ _

Mag_R: *_ _ _ _ _ _ _

Answer: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _