Q3.1

Floating point addition using arithmetic pipeline:

The following sub operations are performed:

1. Compare the exponents.
2. Allign the mantissas.
3. Add mantissas.
4. Normalise the result.

Example: $X = 0.1214 * 10^{10}$ $Y = 0.5000 * 10^{8}$

First of all two exponents are compared and the larger of two exponents is chosen as the result exponent. In this case it is 10. And the value with smaller exponent should be shifted $10 - 8 = 2$ times to the right to give. $Y = 0.0050 \times 10^{10}$

Finally two numbers are added to produce $Z = 0.1264 * 10^{10}$

As the result is already normalized the result remains the same.

If the result was like $1.1264 * 10^{9}$ then we should normalize it to $0.11264 * 10^{11}$