$2^{-1} \rightarrow 0.5$
$2^{-2} \rightarrow 0.125$
$2^{-3} \rightarrow 0.125$
$2^{-4} \rightarrow 0.0625$

3. $12.3125_{10} + 0110_{I2Q2}$

.3125 → d'0.25 + 0 + d'0.0625

12 → b'1100, sign for positive

$12.3125_{10} = b'01100\ 0101_{I5Q4}$

$0110_{I2Q2} = b'00001100_{I5Q4}$

```
  b'01100101
+ b'00001100
------------
  b'01101101   I5Q4  -> 1+4+8+0.5+0.25+0.0625
                     = d'13.8125
```

4. $5.75_{10} - 7.125_{10} = 5.75 + -7.125_{10}$

extra sign for positive

$5.75_{10} \rightarrow d'4 + d'1 + d'0.5 + d'0.25 \rightarrow b'01011_{I4Q2}$

$7.125 \rightarrow d'4 + d'2 + d'1 + d'0.125 \rightarrow b'0111001_{I4Q3}$

$-7.125 \rightarrow 1000110 + b'1 = 1000111_{I4Q3}$

$5.75_{10} = b'01011\ 10_{I4Q3}$

```
  b'01011110
+ b'10001111
------------
  b'11101101   I4Q2
```

absolute value: b'00010010 + b'1 = 00011$_{I4Q3}$

= 1.375

d'-1.375