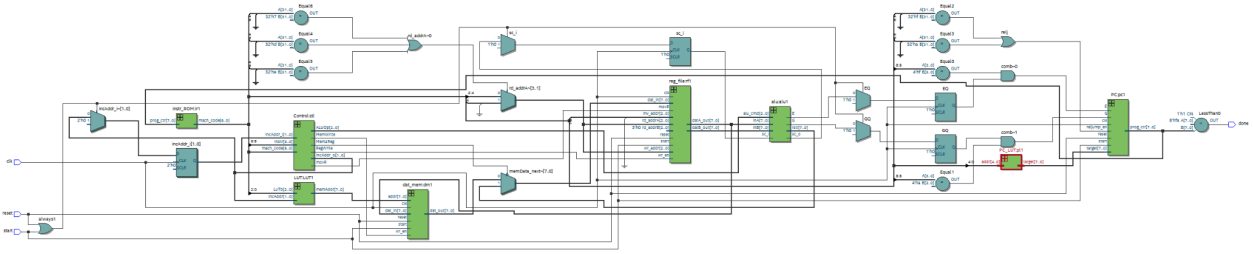
RTL:



Program 1:
Our results vs testbench

```
what's feeding the case 0000000000000000
flt_out_M =     0 = 0.000000 * 2** 0 flt_out_dummy = x  x xxxxxxxxxx
flt_out_M = 0_00000_0000000000, flt_out_you = 0_00000_0000000000
scores: you vs. me =           0, you vs. math           1, out of           0

what's feeding the case 0000000000000001
flt_out_M =     1 = 1.000000 * 2**15 flt_out0=x  x xxxxxxxxxx
flt_out_M = 0_01111_0000000000, flt_out = 0_01111_0000000000
    1 = 1.000000 * 2**         0 flt_out=0          0 1.0000000000
flt_out0=x_xxxxx_xxxxxxxxxx, flt_out = 0_01111_0000000000
scores: you vs. me =           0, you vs. math           2, out of           1

what's feeding the case 0000000000000010
flt_out_M =     2 = 1.000000 * 2**16 flt_out0=0 16 0000000000
flt_out_M = 0_10000_0000000000, flt_out = 0_10000_0000000000
    2 = 1.000000 * 2**         1 flt_out=0          1 1.0000000000
flt_out0=0_10000_0000000000, flt_out = 0_10000_0000000000
scores: you vs. me =           1, you vs. math           3, out of           2

what's feeding the case 0000000000000011
flt_out_M =     3 = 1.500000 * 2**16 flt_out0=0 16 1000000000
flt_out_M = 0_10000_1000000000, flt_out = 0_10000_1000000000
    3 = 1.500000 * 2**         1 flt_out=0          1 1.1000000000
flt_out0=0_10000_1000000000, flt_out = 0_10000_1000000000
scores: you vs. me =           2, you vs. math           4, out of           3

what's feeding the case 0000000000001100
flt_out_M =    12 = 1.500000 * 2**18 flt_out0=0 18 1000000000
flt_out_M = 0_10010_1000000000, flt_out = 0_10010_1000000000
   12 = 1.500000 * 2**         3 flt_out=0          3 1.1000000000
flt_out0=0_10010_1000000000, flt_out = 0_10010_1000000000
scores: you vs. me =           3, you vs. math           5, out of           4

what's feeding the case 0000000000110000
flt_out_M =    48 = 1.500000 * 2**20 flt_out0=0 20 1000000000
flt_out_M = 0_10100_1000000000, flt_out = 0_10100_1000000000
   48 = 1.500000 * 2**         5 flt_out=0          5 1.1000000000
flt_out0=0_10100_1000000000, flt_out = 0_10100_1000000000
scores: you vs. me =           4, you vs. math           6, out of           5

what's feeding the case 0100111100000000
flt_out_M = 20224 = 1.234375 * 2**29 flt_out0=0 29 0011110000
flt_out_M = 0_11101_0011110000, flt_out = 0_11101_0011110000
20224 = 1.234375 * 2**        14 flt_out=0         14 1.0011110000
flt_out0=0_11101_0011110000, flt_out = 0_11101_0011110000
scores: you vs. me =           5, you vs. math           7, out of           6
```

```
what's feeding the case 1000111100000000
flt_out_M = 28928 = 1.765625 * 2**29 flt_out0=0 29 1100010000
flt_out_M = 1_11101_1100010000, flt_out = 1_11101_1100010000
28928 = 1.765625 * 2**        14 flt_out=1         14 1.1100010000
flt_out0=0_11101_1100010000, flt_out = 1_11101_1100010000
scores: you vs. me =           5, you vs. math           8, out of           7

what's feeding the case 0111111100000000
flt_out_M = 32512 = 1.984375 * 2**29 flt_out0=0 29 1111110000
flt_out_M = 0_11101_1111110000, flt_out = 0_11101_1111110000
32512 = 1.984375 * 2**        14 flt_out=0         14 1.1111110000
flt_out0=0_11101_1111110000, flt_out = 0_11101_1111110000
scores: you vs. me =           6, you vs. math           9, out of           8

what's feeding the case 0011000010000000
flt_out_M = 12416 = 1.515625 * 2**28 flt_out0=0 28 1000010000
flt_out_M = 0_11100_1000010000, flt_out = 0_11100_1000010000
12416 = 1.515625 * 2**        13 flt_out=0         13 1.1000010000
flt_out0=0_11100_1000010000, flt_out = 0_11100_1000010000
scores: you vs. me =           7, you vs. math          10, out of           9

what's feeding the case 1000100000000000
flt_out_M = 30720 = 1.875000 * 2**29 flt_out0=0 29 1110000000
flt_out_M = 1_11101_1110000000, flt_out = 1_11101_1110000000
30720 = 1.875000 * 2**        14 flt_out=1         14 1.1110000000
flt_out0=0_11101_1110000000, flt_out = 1_11101_1110000000
scores: you vs. me =           7, you vs. math          11, out of          10

what's feeding the case 1000001000000000
flt_out_M = 32256 = 1.968750 * 2**29 flt_out0=0 29 1111100000
flt_out_M = 1_11101_1111100000, flt_out = 1_11101_1111100000
32256 = 1.968750 * 2**        14 flt_out=1         14 1.1111100000
flt_out0=0_11101_1111100000, flt_out = 1_11101_1111100000
scores: you vs. me =           7, you vs. math          12, out of          11

what's feeding the case 0000000001010101
flt_out_M =    85 = 1.328125 * 2**21 flt_out0=0 21 0101010000
flt_out_M = 0_10101_0101010000, flt_out = 0_10101_0101010000
   85 = 1.328125 * 2**         6 flt_out=0          6 1.0101010000
flt_out0=0_10101_0101010000, flt_out = 0_10101_0101010000
scores: you vs. me =           8, you vs. math          13, out of          12

what's feeding the case 0000010101010000
flt_out_M =  1360 = 1.328125 * 2**25 flt_out0=0 25 0101010000
flt_out_M = 0_11001_0101010000, flt_out = 0_11001_0101010000
 1360 = 1.328125 * 2**        10 flt_out=0         10 1.0101010000
flt_out0=0_11001_0101010000, flt_out = 0_11001_0101010000
scores: you vs. me =           9, you vs. math          14, out of          13

what's feeding the case 0100000010000000
```

```
what's feeding the case 0111111100000000
flt_out_M = 32512 = 1.984375 * 2**29 flt_out0=0 29 1111110000
flt_out_M = 0_11101_1111110000, flt_out = 0_11101_1111110000
32512 = 1.984375 * 2**        14 flt_out=0         14 1.1111110000
flt_out0=0_11101_1111110000, flt_out = 0_11101_1111110000
scores: you vs. me =           6, you vs. math           9, out of           8

what's feeding the case 0011000010000000
flt_out_M = 12416 = 1.515625 * 2**28 flt_out0=0 28 1000010000
flt_out_M = 0_11100_1000010000, flt_out = 0_11100_1000010000
12416 = 1.515625 * 2**        13 flt_out=0         13 1.1000010000
flt_out0=0_11100_1000010000, flt_out = 0_11100_1000010000
scores: you vs. me =           7, you vs. math          10, out of           9

what's feeding the case 1000100000000000
flt_out_M = 30720 = 1.875000 * 2**29 flt_out0=0 29 1110000000
flt_out_M = 1_11101_1110000000, flt_out = 1_11101_1110000000
30720 = 1.875000 * 2**        14 flt_out=1         14 1.1110000000
flt_out0=0_11101_1110000000, flt_out = 1_11101_1110000000
scores: you vs. me =           7, you vs. math          11, out of          10

what's feeding the case 1000001000000000
flt_out_M = 32256 = 1.968750 * 2**29 flt_out0=0 29 1111100000
flt_out_M = 1_11101_1111100000, flt_out = 1_11101_1111100000
32256 = 1.968750 * 2**        14 flt_out=1         14 1.1111100000
flt_out0=0_11101_1111100000, flt_out = 1_11101_1111100000
scores: you vs. me =           7, you vs. math          12, out of          11

what's feeding the case 0000000001010101
flt_out_M =    85 = 1.328125 * 2**21 flt_out0=0 21 0101010000
flt_out_M = 0_10101_0101010000, flt_out = 0_10101_0101010000
   85 = 1.328125 * 2**         6 flt_out=0          6 1.0101010000
flt_out0=0_10101_0101010000, flt_out = 0_10101_0101010000
scores: you vs. me =           8, you vs. math          13, out of          12

what's feeding the case 0000010101010000
flt_out_M =  1360 = 1.328125 * 2**25 flt_out0=0 25 0101010000
flt_out_M = 0_11001_0101010000, flt_out = 0_11001_0101010000
 1360 = 1.328125 * 2**        10 flt_out=0         10 1.0101010000
flt_out0=0_11001_0101010000, flt_out = 0_11001_0101010000
scores: you vs. me =           9, you vs. math          14, out of          13

what's feeding the case 0100000010000000
flt_out_M = 16512 = 1.007813 * 2**29 flt_out0=0 29 0000001000
flt_out_M = 0_11101_0000001000, flt_out = 0_11101_0000001000
16512 = 1.007813 * 2**        14 flt_out=0         14 1.0000001000
flt_out0=0_11101_0000001000, flt_out = 0_11101_0000001000
scores: you vs. me =          10, you vs. math          15, out of          14

what's feeding the case 0000001000101100
flt_out_M =   556 = 1.085938 * 2**24 flt_out0=0 24 0001011000
flt_out_M = 0_11000_0001011000, flt_out = 0_11000_0001011000
  556 = 1.085938 * 2**         9 flt_out=0          9 1.0001011000
flt_out0=0_11000_0001011000, flt_out = 0_11000_0001011000
scores: you vs. me =          11, you vs. math          16, out of          15
```

```
what's feeding the case 1000000000100000
flt_out_M = 32736 = 1.998047 * 2**29 flt_out0=0 29 1111111110
flt_out_M = 1_11101_1111111110, flt_out = 1_11101_1111111110
32736 = 1.998047 * 2**        14 flt_out=1         14 1.1111111110
flt_out0=0_11101_1111111110, flt_out = 1_11101_1111111110
scores: you vs. me =          11, you vs. math          17, out of          16

what's feeding the case 0111111111110000
flt_out_M = 32752 = 1.999023 * 2**29 flt_out0=0 29 1111111111
flt_out_M = 0_11101_1111111111, flt_out = 0_11101_1111111111
32752 = 1.999023 * 2**        14 flt_out=0         14 1.1111111111
flt_out0=0_11101_1111111111, flt_out = 0_11101_1111111111
scores: you vs. me =          12, you vs. math          18, out of          17

what's feeding the case 1111111111000000
flt_out_M =    64 = 1.000000 * 2**21 flt_out0=0 21 0000000000
flt_out_M = 1_10101_0000000000, flt_out = 1_10101_0000000000
   64 = 1.000000 * 2**         6 flt_out=1          6 1.0000000000
flt_out0=0_10101_0000000000, flt_out = 1_10101_0000000000
scores: you vs. me =          12, you vs. math          19, out of          18

scores =          12          19 out of          18
```

Program 2:

```
0.000000 * 2**-15 = 0.000000 =      0
from dum = 0000000000000000 =     0
from DUT = 0000000000000000 =     0

1.000000 * 2**  0 = 1.000000 =      1
from dum = 0000000000000001 =     1
from DUT = 0000000000000001 =     1

1.500000 * 2**  0 = 1.500000 =      2
from dum = 0000000000000001 =     1
from DUT = 0000000000000001 =     1

1.250000 * 2**  0 = 1.250000 =      1
from dum = 0000000000000001 =     1
from DUT = 0000000000000001 =     1

1.750000 * 2**  0 = 1.750000 =      2
from dum = 0000000000000001 =     1
from DUT = 0000000000000001 =     1

1.000000 * 2**  1 = 2.000000 =      2
from dum = 0000000000000010 =     2
from DUT = 0000000000000010 =     2

1.500000 * 2**  1 = 3.000000 =      3
from dum = 0000000000000011 =     3
from DUT = 0000000000000011 =     3

1.750000 * 2**  1 = 3.500000 =      4
from dum = 0000000000000011 =     3
from DUT = 0000000000000011 =     3

1.875000 * 2**  1 = 3.750000 =      4
from dum = 0000000000000011 =     3
from DUT = 0000000000000011 =     3

1.062500 * 2**  1 = 2.125000 =      2
from dum = 0000000000000010 =     2
from DUT = 0000000000000010 =     2

1.062500 * 2**  1 = 2.125000 =      2
from dum = 0000000000000010 =     2
from DUT = 0000000000000010 =     2

1.312500 * 2**  1 = 2.625000 =      3
from dum = 0000000000000010 =     2
from DUT = 0000000000000010 =     2

1.312500 * 2**  1 = 2.625000 =      3
from dum = 0000000000000010 =     2
from DUT = 0000000000000010 =     2

1.437500 * 2**  1 = 2.875000 =      3
from dum = 0000000000000010 =     2
from DUT = 0000000000000010 =     2

1.750000 * 2**  3 = 14.000000 =     14
from dum = 0000000000001110 =    14
from DUT = 0000000000001110 =    14

1.875000 * 2**  3 = 15.000000 =     15
from dum = 0000000000001111 =    15
from DUT = 0000000000001111 =    15

1.750000 * 2**  9 = 896.000000 =    896
from dum = 0000001110000000 =   896
from DUT = 0000001110000000 =   896

1.750000 * 2** 10 = 1792.000000 =   1792
from dum = 0000011100000000 =  1792
from DUT = 0000011100000000 =  1792

1.875000 * 2** 14 = 30720.000000 =  30720
from dum = 0111100000000000 = 30720
from DUT = 0111100000000000 = 30720

1.875000 * 2** 15 = 30720.000000 =  32767
from dum = 0111111111111111 = 32767
from DUT = 0111111111111111 = 32767

0.000000 * 2**-15 = 0.000000 =      0
from dum = 0000000000000000 =     0
from DUT = 0000000000000000 =     0

1.000000 * 2**  0 = 1.000000 =     -1
from dum = 1111111111111111 = 65535
from DUT = 1111111111111111 = 65535

1.500000 * 2**  0 = 1.500000 =     -2
from dum = 1111111111111111 = 65535
from DUT = 1111111111111111 = 65535
```

```
1.250000 * 2**  0 = 1.250000 =     -1
from dum = 1111111111111111 = 65535
from DUT = 1111111111111111 = 65535

1.750000 * 2**  0 = 1.750000 =     -2
from dum = 1111111111111111 = 65535
from DUT = 1111111111111111 = 65535

1.000000 * 2**  1 = 2.000000 =     -2
from dum = 1111111111111110 = 65534
from DUT = 1111111111111110 = 65534

1.500000 * 2**  1 = 3.000000 =     -3
from dum = 1111111111111101 = 65533
from DUT = 1111111111111101 = 65533

1.750000 * 2**  1 = 3.500000 =     -4
from dum = 1111111111111101 = 65533
from DUT = 1111111111111101 = 65533

1.875000 * 2**  1 = 3.750000 =     -4
from dum = 1111111111111101 = 65533
from DUT = 1111111111111101 = 65533

1.062500 * 2**  1 = 2.125000 =     -2
from dum = 1111111111111110 = 65534
from DUT = 1111111111111110 = 65534

1.062500 * 2**  1 = 2.125000 =     -2
from dum = 1111111111111110 = 65534
from DUT = 1111111111111110 = 65534

1.312500 * 2**  1 = 2.625000 =     -3
from dum = 1111111111111110 = 65534
from DUT = 1111111111111110 = 65534

1.437500 * 2**  1 = 2.875000 =     -3
from dum = 1111111111111110 = 65534
from DUT = 1111111111111110 = 65534

1.750000 * 2**  3 = 14.000000 =    -14
from dum = 1111111111110010 = 65522
from DUT = 1111111111110010 = 65522

1.875000 * 2**  3 = 15.000000 =    -15
from dum = 1111111111110001 = 65521
from DUT = 1111111111110001 = 65521
```

```
1.750000 * 2**  9 = 896.000000 =   -896
from dum = 1111110010000000 = 64640
from DUT = 1111110010000000 = 64640

1.750000 * 2** 10 = 1792.000000 =  -1792
from dum = 1111100100000000 = 63744
from DUT = 1111100100000000 = 63744

1.875000 * 2** 14 = 30720.000000 = -30720
from dum = 1000100000000000 = 34816
from DUT = 1000100000000000 = 34816

1.875000 * 2** 15 = 30720.000000 = -32768
from dum = 1000000000000000 = 32768
from DUT = 1000000000000000 = 32768

correct          38 out of total          38
correct          26 out of total          38
```

Program 3:
Our results with our done flag, then the results of the testbench using its own done flag, to show that our results are indeed correct:

Always our result, then TB

Case 0:
Ours:

```
# flt1b = 0  00110  1000000100
# flt2b = 0  00110  1000000100
# flt3b =  0  00111  1000000100
# flt3_testb =  00111   1000000100
# flt3_real =       0.0058746338
# flt3_for_diff =       0.0058746338
# diff =       0.0000000000
# scores =           1,           1 out of           0
# clock cycle ct =         178
#
```

TB:

```
# flt1b = 0  00110  1000000100
# flt2b = 0  00110  1000000100
# flt3b =  0  00000  0000000000
# flt3_testb =  00111   1000000100
# flt3_real =       0.0058746338
# flt3_for_diff =       0.0000000000
# diff =       0.0058746338
# scores =           0,           0 out of           0
# clock cycle ct =           3
```

Case 1:

```
# flt1b = 0  00110  1000000100
# flt2b = 0  00110  1000000100
# flt3b =  0  00111  1000000100
# flt3_testb =  00111   1000000100
# flt3_real =       0.0058746338
# flt3_for_diff =       0.0058746338
# diff =       0.0000000000
# scores =           2,           2 out of           1
# clock cycle ct =         357
```

```
 flt1b = 0  00110  1000000100
 flt2b = 0  00110  1000000100
 flt3b =  0  00000  0000000000
 flt3_testb =  00111   1000000100
 flt3_real =       0.0058746338
 flt3_for_diff =       0.0000000000
 diff =       0.0058746338
 scores =           0,           0 out of           1
 clock cycle ct =           7
```

Case 2:

```
# flt1b = 0  10000  1000000100
# flt2b = 0  10000  1000000100
# flt3b =  0  10001  1000000100
# flt3_testb =  10001   1000000100
# flt3_real =       6.0156250000
# flt3_for_diff =       6.0156250000
# diff =       0.0000000000
# scores =           3,           3 out of           2
# clock cycle ct =         536
```

```
# flt1b = 0  10000  1000000100
# flt2b = 0  10000  1000000100
# flt3b =  0  00000  0000000000
# flt3_testb =  10001   1000000100
# flt3_real =       6.0156250000
# flt3_for_diff =       0.0000000000
# diff =       6.0156250000
# scores =           0,           0 out of           2
# clock cycle ct =          11
```

Case 3:

```
# flt1b = 0  10010  1000010000
# flt2b = 0  10000  1000000100
# flt3b =  0  10010  1110010001
# flt3_testb =  10010   1101100101
# flt3_real =      15.1328125000
# flt3_for_diff =      15.1328125000
# diff =       0.0000000000
# scores =           4,           3 out of           3
# clock cycle ct =         744
```

```
# flt1b = 0  10010  1000010000
# flt2b = 0  10000  1000000100
# flt3b =  0  00000  0000000000
# flt3_testb =  10010   1110010001
# flt3_real =      15.1328125000
# flt3_for_diff =       0.0000000000
# diff =      15.1328125000
# scores =           0,           0 out of           3
# clock cycle ct =          15
```

Case 4:

```
# flt1b = 0  10100  1000001111
# flt2b = 0  00000  0001000000
# flt3b =  0  10100  1000001111
# flt3_testb =  10100   1000001111
# flt3_real =      48.4687519073
# flt3_for_diff =      48.4687500000
# diff =       0.0000019073
# scores =           5,           4 out of           4
# clock cycle ct =        1150
```

```
# flt1b = 0  10100  1000001111
# flt2b = 0  00000  0001000000
# flt3b =  0  00000  0000000000
# flt3_testb =  10100   1000001111
# flt3_real =      48.4687519073
# flt3_for_diff =       0.0000000000
# diff =      48.4687519073
# scores =           0,           0 out of           4
# clock cycle ct =          19
```

Case 5:

```
 flt1b = 0  00110  1000000100
 flt2b = 0  00111  1000000100
 flt3b =  0  01000  0010000011
 flt3_testb =  01000   0100000001
 flt3_real =       0.0088119507
 flt3_for_diff =       0.0088119507
 diff =       0.0000000000
 scores =           6,           4 out of           5
 clock cycle ct =        1379

 flt1b = 0  00110  1000000100
 flt2b = 0  00111  1000000100
 flt3b =  0  00000  0000000000
 flt3_testb =  01000   0010000011
 flt3_real =       0.0088119507
 flt3_for_diff =       0.0000000000
 diff =       0.0088119507
 scores =           0,           0 out of           5
 clock cycle ct =          23
```

Case 6:

```
 flt1b = 0  10000  1000000000
 flt2b = 0  10101  1000000100
 flt3b =  0  10101  1000110100
 flt3_testb =  10101   1000100101
 flt3_real =      99.2500000000
 flt3_for_diff =      99.2500000000
 diff =       0.0000000000
 scores =           7,           4 out of           6
 clock cycle ct =        1645
```

```
# flt1b = 0  10000  1000000000
# flt2b = 0  10101  1000000100
# flt3b =  0  00000  0000000000
# flt3_testb =  10101   1000110100
# flt3_real =      99.2500000000
# flt3_for_diff =       0.0000000000
# diff =      99.2500000000
# scores =           0,           0 out of           6
# clock cycle ct =          27
```

Case 7:

```
flt1b = 0  10010  1000000000
flt2b = 0  10111  1000000100
flt3b =  0  10111  1000110100
flt3_testb =  10111   1000100101
flt3_real =     397.0000000000
flt3_for_diff =     397.0000000000
diff =       0.0000000000
scores =           8,           4 out of           7
clock cycle ct =        1911

flt1b = 0  10010  1000000000
flt2b = 0  10111  1000000100
flt3b =  0  00000  0000000000
flt3_testb =  10111   1000110100
flt3_real =     397.0000000000
flt3_for_diff =       0.0000000000
diff =     397.0000000000
scores =           0,           0 out of           7
clock cycle ct =          31
```

Case 8:

```
flt1b = 0  10100  1000000000
flt2b = 0  00000  1000000100
flt3b =  0  10100  1000000000
flt3_testb =  10100   1000000000
flt3_real =      48.0000153780
flt3_for_diff =      48.0000000000
diff =       0.0000153780
scores =           9,           5 out of           8
clock cycle ct =        2317

flt1b = 0  10100  1000000000
flt2b = 0  00000  1000000100
flt3b =  0  00000  0000000000
flt3_testb =  10100   1000000000
flt3_real =      48.0000153780
flt3_for_diff =       0.0000000000
diff =      48.0000153780
scores =           0,           0 out of           8
clock cycle ct =          35
```

Case 9:

```
flt1b = 0  00110  1000000100
flt2b = 0  00110  1000000100
flt3b =  0  00111  1000000100
flt3_testb =  00111   1000000100
flt3_real =       0.0058746338
flt3_for_diff =       0.0058746338
diff =       0.0000000000
scores =          10,           6 out of           9
clock cycle ct =        2496
```

```
flt1b = 0  00110  1000000100
flt2b = 0  00110  1000000100
flt3b =  0  00000  0000000000
flt3_testb =  00111  1000000100
flt3_real =       0.0058746338
flt3_for_diff =       0.0000000000
diff =       0.0058746338
scores =           0,           0 out of           9
clock cycle ct =          39
```

Case 10:

```
flt1b = 0  10110  1000000100
flt2b = 0  10110  1000000100
flt3b =  0  10111  1000000100
flt3_testb =  10111  1000000100
flt3_real =     385.0000000000
flt3_for_diff =     385.0000000000
diff =       0.0000000000
scores =          11,           7 out of          10
clock cycle ct =        2675
```

```
flt1b = 0  10110  1000000100
flt2b = 0  10110  1000000100
flt3b =  0  00000  0000000000
flt3_testb =  10111  1000000100
flt3_real =     385.0000000000
flt3_for_diff =       0.0000000000
diff =     385.0000000000
scores =           0,           0 out of           1
clock cycle ct =          43
```

Case 11:

```
flt1b = 0  10010  1000010000
flt2b = 0  10000  1000000100
flt3b =  0  10010  1110010001
flt3_testb =  10010  1101100101
flt3_real =      15.1328125000
flt3_for_diff =      15.1328125000
diff =       0.0000000000
scores =          12,           7 out of          11
clock cycle ct =        2883
```

```
flt1b = 0  10010  1000010000
flt2b = 0  10000  1000000100
flt3b =  0  00000  0000000000
flt3_testb =  10010  1110010001
flt3_real =      15.1328125000
flt3_for_diff =       0.0000000000
diff =      15.1328125000
scores =           0,           0 out of          11
clock cycle ct =          47
```

Case 12:

```
flt1b = 0  11010  1000001111
flt2b = 0  10100  1000000000
flt3b =  0  11010  1000100111
flt3_testb =  11010   1000011111
flt3_real =    3150.0000000000
flt3_for_diff =    3150.0000000000
diff =       0.0000000000
scores =          13,           7 out of          12
clock cycle ct =        3135

flt1b = 0  11010  1000001111
flt2b = 0  10100  1000000000
flt3b =  0  00000  0000000000
flt3_testb =  11010   1000100111
flt3_real =    3150.0000000000
flt3_for_diff =       0.0000000000
diff =    3150.0000000000
scores =           0,           0 out of          12
clock cycle ct =          51
```