

1. As below:

Description	Hex	M	E	V
-0	8000	0	-62	-0
Smallest value > 1	3F01	$\frac{257}{256}$	0	$\frac{257}{256}$
256	4700	1	8	—
Largest denormalized	00FF	$\frac{255}{256}$	-62	255×2^{-70}
$-\infty$	FF00	—	—	—
Number with hex representation 3AA0	—	$\frac{13}{8}$	-5	$\frac{13}{256}$

2. A. (double)(float) x == dx No.

B. dx + dy == (double) (x+y) No

C. dx + dy + dz == dz + dy + dx Yes

D. dx * dy * dz == dz * dy * dx No

E. dx / dx == dy / dy No

3. $S = 1 \wedge 0 = 1$

$$E = 0101011 + 1000101 - \text{bias} = 0110001$$

$$M = 1.10011010 * 1.01010001 = 10.0001101110111010$$

$$E' = E + 1 = 0110010$$

$$M' = 1.00001101110111010 \rightarrow \text{round to even} \rightarrow 1.00001110$$

$$\text{Result} = 1 \ 0110010 \ 00001110$$

4. As below:

Y86 Instructions	Byte Codes
addl %edx, %eax	0x6020
subl %esi, %edi	0x6176
rrmovl %esp, %ebp	0x2045

rmmovl %ecx, 0x60(%ebx)	0x401360000000
pushl %eax	0xA00F