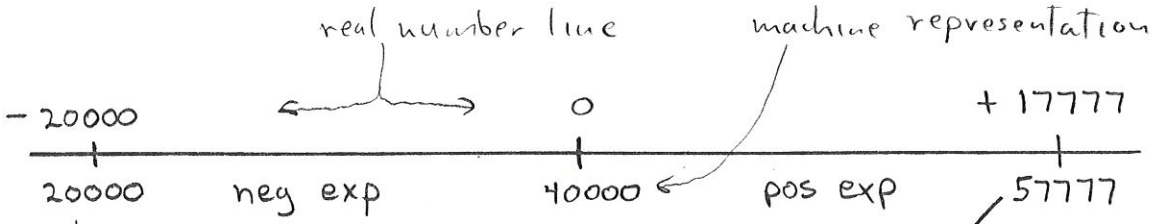
Exponent Range



minimum allowed exponent

maximum allowed exponent

exp 17777 mean underflow which means number is to small for machine

exp 60000 means overflow which means number to big for machine

underflow

20000 → 010 000 000 000 000

17777 → 001 111 111 111 111

bit 2^{61}

bit 2^{62}

if $2^{61} = 2^{62} = \emptyset$ underflow

overflow

57777 → 101 111 111 111 111

60000 → 110 000 000 000 000

bit 2^{61}

bit 2^{62}

if $2^{61} = 2^{62} = 1$ says overflo

exponent $\geq$ 60000 results in floating point range error

exponent < 20000 treated as zero exponent (no error flagged