s	e	e	e	e	m	m	m	m	m

s	e	e	e	e	m	m	m	m	m

- STEP 1

$$unpack\ operands$$

s	e	e	e	e	1.	m	m	m	m	m

s	e	e	e	e	1.	m	m	m	m	m

- STEP 2

$$d = X_E - Y_E$$

$$if\ d < 0 \rightarrow SWAP\ X \leftrightarrow Y$$

$$Z_E = X_E$$

- STEP 3

$$sign(X) \neq sign(Y) \rightarrow Y_{M_{C2}}$$

- STEP 4

$$Allign\ Y_M{:}\ RSH \gg |d|$$

$$if\ Y_{M_{C2}} in\ step\ 3 \rightarrow introduce\ 1's$$

$$else \rightarrow introduce\ 0's$$

$$preserve\ g, r, s$$

- STEP 5

$$Z_M = X_M + Y_{M_{al}}$$

$$sign(X) = sign(Y) \rightarrow preserve\ Cout\ if\ gen.$$

$$sign(X) \neq sign(Y) \rightarrow \begin{cases} \sout{Cout} \rightarrow Z_{M_{C2}}\ COMP \\ Cout \rightarrow discard \end{cases}$$

- STEP 6

$$determine\ Z_{M_{norm}} \rightarrow update\ Z_E$$

$$RSH \ll until\ Z_M = 1.zzzz$$

- STEP 7

$$calculate\ R, S{:}\ Z_M = 1.zzzz_{-m}|RS$$

- STEP 9

SWAP (STEP 2)	COMP (STEP 5)	SIGN
YES		$sign(Z) = sign(Y)\ before\ swap$
NO	YES	$sign(Z) = sign(Y)$
NO	NO	$sign(Z) = sign(X)$

- STEP 8

$ROUNDING\ MODE$	$+Z$	$-Z$
$to\ 0$	$-$	$-$
$towards\ -\infty$	$-$	$if\ R\ or\ S \rightarrow Z_{M_{norm}} - 1$
$towards + \infty$	$if\ R\ or\ S \rightarrow Z_{M_{norm}} + 1$	$-$
$to\ nearest\ even$	$if\ R\ and\ (S\ or\ z_{-m}) \rightarrow Z_{M_{norm}} + 1$	$if\ R\ and\ (S\ or\ z_{-m}) \rightarrow Z_{M_{norm}} - 1$