

$$X = 1.0000\ 1101\ (269/256)$$

$$D = 1.0011\ 0110\ (310/256)$$

$$Q = 0.1101\ 1110\ (222/256)$$

$D[1.3] = 1.001$, so we use the “1.001” column of chart 13.X. This means we select a quotient bit of 2 if the partial remainder is greater than or equal to 3.5, a quotient bit of 1 if the partial is greater or equal to than 1.0, a zero if the partial is greater than or equal to -1.5, -1 if the partial is greater than or equal to -3.75, and a -2 otherwise.

| | | | |
|----------------|---|-----------------------|---|
| Initialization | D | 0001.0011 0110 00 | |
| | $2D$ | 0010.0110 1100 00 | |
| | $-D = \overline{D} + 1$ | 1110.1100 1001 11 | (+ 1 ulp) |
| | $-2D = \overline{2D} + 1$ | 1101.1001 0011 11 | (+ 1 ulp) |
| | $WS_{-1} = X$ | 0001.0000 1101 00 | |
| | WC_{-1} | 0000.0000 0000 00 | |
| | | | |
| Step 0: | WS_{-1} | 0001.0000 1101 00 | |
| | WC_{-1} | 0000.0000 0000 01 | ($W_{msbs} = 0001.000$ so $q_0 = 1$) |
| | $-q_0D$ | 1110.1100 1001 11 | |
| | <hr style="width: 100%; border: 0.5px solid black;"/> | | |
| | sum | 1111.1100 0100 10 | $\ll 2$ |
| | $carry$ | 0000.0001 0010 10 | $\ll 2$ |
| | | | |
| Step 1: | WS_0 | 1111.0001 0010 00 | |
| | WC_0 | 0000.0100 1010 00 | ($W_{msbs} = 1111.010$ so $q_1 = -1$) |
| | $-q_1D$ | 0001.0011 0110 00 | |
| | <hr style="width: 100%; border: 0.5px solid black;"/> | | |
| | sum | 1110.0110 1110 00 | $\ll 2$ |
| | $carry$ | 0010.0010 0100 00 | $\ll 2$ |
| | | | |
| Step 2: | WS_1 | 1001.1011 1000 00 | |
| | WC_1 | 1000.1001 0000 01 | ($W_{msbs} = 0010.010$ so $q_2 = 2$) |
| | $-q_2D$ | 1101.1001 0011 11 | |
| | <hr style="width: 100%; border: 0.5px solid black;"/> | | |
| | sum | 1100.1011 1011 10 | $\ll 2$ |
| | $carry$ | 0011.0010 0000 10 | $\ll 2$ |
| | | | |
| Step 3: | WS_2 | 0010.1110 1110 00 | |
| | WC_2 | 1100.1000 0010 00 | ($W_{msbs} = 1111.011$ so $q_3 = -1$) |
| | $-q_3D$ | 0001.0011 0110 00 | |
| | <hr style="width: 100%; border: 0.5px solid black;"/> | | |
| | sum | 1111.0101 1010 00 | $\ll 2$ |
| | $carry$ | 0001.0100 0100 00 | $\ll 2$ |
| | | | |
| Step 4: | WS_3 | 1101.0110 1000 00 | |
| | WC_3 | 0101.0001 0000 01 | ($W_{msbs} = 0010.011$ so $q_4 = 2$) |
| | $-q_4D$ | 1101.1001 0011 11 | |
| | <hr style="width: 100%; border: 0.5px solid black;"/> | | |
| | sum | 0101.1110 1011 10 | $\ll 2$ |
| | $carry$ | 1010.0010 0000 10 | $\ll 2$ |
| | | | |
| Step 5: | WS_4 | 0111.1010 1110 00 | |
| | WC_4 | 1000.1000 0010 00 | ($W_{msbs} = 0000.001$ so $q_5 = 0$) |
| | $-q_5D$ | 0000.0000 0000 00 | |
| | <hr style="width: 100%; border: 0.5px solid black;"/> | | |
| | sum | 1111.0010 1100 00 | $\ll 2$ |
| | $carry$ | 0001.0000 0100 00 | $\ll 2$ |
| | | | |
| Terminate | Quotient | 00.11 01 11 10 (00 1) | |