



muxes:

$x_{\text{in}}: \text{q45_to_q516}(x) \vee 0.6072529351 \rightarrow 1 \text{ mux}_{2x1}$

$y_{\text{in}}: \text{q45_to_q516}(y) \vee 0 \rightarrow 1 \text{ mux}_{2x1}$

$z_{\text{in}}: 0 \vee \text{q416_to_q516}(z) \rightarrow 1 \text{ mux}_{2x1}$

$x_{\text{calc}}: (x_{\text{in}}) \vee (x_{\text{calc}} \pm (y_{\text{calc}} \gg i)) \vee (m) \rightarrow 1 \text{ mux}_{3x1}$

$y_{\text{calc}}: (y_{\text{in}}) \vee (y_{\text{calc}} \pm (x_{\text{calc}} \gg i)) \rightarrow 1 \text{ mux}_{2x1}$

$z_{\text{calc}}: (z_{\text{in}}) \vee \text{arctan}(i) \rightarrow 1 \text{ mux}_{2x1}$

$\text{zero_comp_arg}: (y_{\text{calc}}) \vee (z_{\text{calc}}) \rightarrow 1 \text{ mux}_{2x1}$

$\text{1st sum_or_sub args}: [x_{\text{calc}}, (y_{\text{calc}} \gg i)] \vee [(x_{\text{calc}} \gg 1), (x_{\text{calc}} \gg 3)] \rightarrow 2 \text{ mux}_{2x1}$

$\text{2nd sum_or_sub args}: [y_{\text{calc}}, (x_{\text{calc}} \gg i)] \vee \{(x \gg 1) + (x \gg 3), [(x \gg 6) + (x \gg 9) + (x \gg 12)]\} \rightarrow 2 \text{ mux}_{2x1}$

$\text{3rd sum_or_sub args}: [z_{\text{calc}}, \text{arctan}(i)] \vee [(x_{\text{calc}} \gg 6), (x_{\text{calc}} \gg 9)] \rightarrow 2 \text{ mux}_{2x1}$