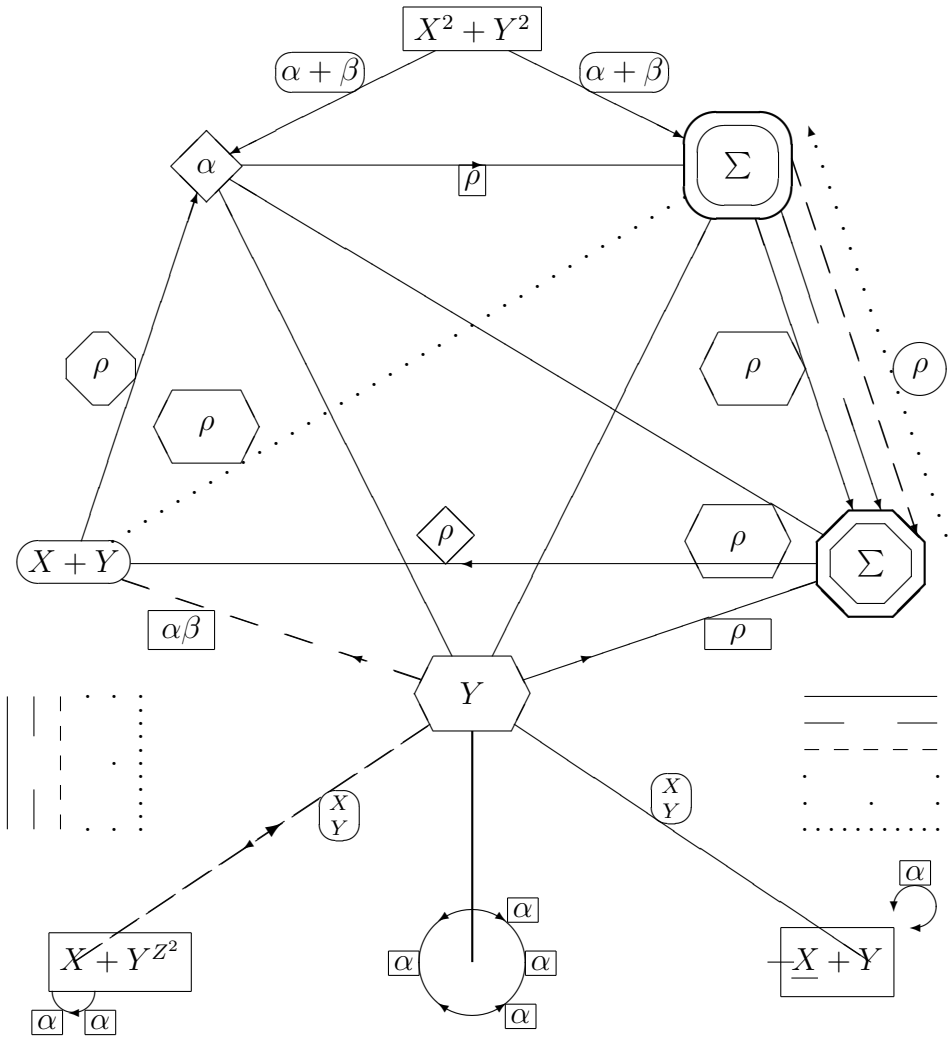
TESTS OF DIAGRAM MACROS

April 22, 2009

$$\begin{tikzcd}
A \arrow[r, "c"] \arrow[d, "a"'] & B \arrow[d, "b"] \\
A' \arrow[r, "c'"'] & B'
\end{tikzcd}$$

$$\begin{tikzcd}
A \arrow[r, "c"] \arrow[d, "a"'] & B \arrow[d, "b"] \\
A' \arrow[r, "c'"'] & B'
\end{tikzcd}$$


X^2+Y^2
$\alpha+\beta$
$\alpha+\beta$
α
ρ
Σ
ρ
ρ
ρ
ρ
ρ
ρ
ρ
$X+Y$
Σ
$\alpha\beta$
ρ
Y
X
Y
X
Y
α
α
α
α
α
$X+Y^{Z^2}$
α
α
$X+Y$

$$
\begin{tikzcd}
X_0 = X \arrow[loop left, "I_X"] \arrow[r, "\alpha"] \arrow[d, "\alpha'"'] \arrow[dr, Rightarrow, "\alpha;\beta"] & Y \arrow[loop right, "I_Y"] \arrow[d, "\beta"] \\
Y' \arrow[loop left, "I_{Y'}"] \arrow[r, "\beta'"'] & Z = Z_0 \arrow[loop right, "I_Z"] \\
\end{tikzcd}
\qquad
\begin{tikzcd}
X_0 = X \arrow[loop left, "I_X"] \arrow[r, dashed, "\alpha"] \arrow[d, dashed, "\alpha'"'] \arrow[dr, Rightarrow, "\alpha';\beta'"'] & Y \arrow[loop right, "I_Y"] \arrow[d, dashed, "\beta"] \\
Y' \arrow[loop left, "I_{Y'}"] \arrow[r, dashed, "\beta'"'] & Z = Z_0 \arrow[loop right, "I_Z"] \\
\end{tikzcd}
$$

$$
\begin{tikzcd}
X_0 = X \arrow[r, "\alpha"] \arrow[d, "\alpha'"'] \arrow[dr, shift left, Rightarrow, "\rho"] & Y \arrow[d, "\beta"] \arrow[dl, shift left, Rightarrow, "\theta"] \\
Y' \arrow[r, "\beta'"'] \arrow[ur, shift left, Rightarrow, "\theta'"] & Z = Z_0 \arrow[ul, shift left, Rightarrow, "\rho'"]
\end{tikzcd}
$$

$$
\begin{tikzcd}
Y \arrow[dr, shift right, "\alpha"'] & & Z \arrow[dl, shift left, "\alpha"] \\
& X \arrow[ul, shift right, "\beta"'] \arrow[ur, shift left, "\beta"] & \\
Y \arrow[uur, shift left, "\alpha"] \arrow[rr, shift left, "\alpha"] & & Z \arrow[uul, shift right, "\alpha"'] \arrow[ll, shift right, "\beta"']
\end{tikzcd}
$$

$$
\begin{tikzcd}
Y \arrow[rr, shift left, "\alpha"] & & X \arrow[ll, shift right, "\beta"'] \arrow[rr, shift left, "\alpha"] & & Z \arrow[ll, shift right, "\beta"']
\end{tikzcd}
$$

$$
\begin{tikzcd}
Y \arrow[dr, shift right, "\alpha"'] & & Z \arrow[dl, shift left, "\alpha"] \\
& X \arrow[ul, shift right, "\beta"'] \arrow[ur, shift left, "\beta"] & \\
Y \arrow[uur, shift left, "\alpha"] \arrow[rr, shift left, "\alpha"] & & Z \arrow[uul, shift right, "\alpha"'] \arrow[ll, shift right, "\beta"']
\end{tikzcd}
$$

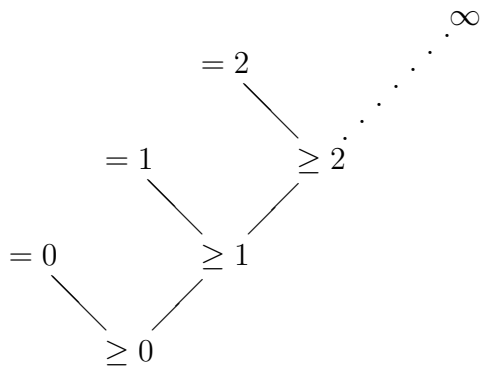
$$
\begin{tikzcd}
Y \arrow[dr, shift right, "\alpha"'] \arrow[dr, shift left, "\beta"] & Y \arrow[d, shift right, "\alpha"'] \arrow[d, shift left, "\beta"] & Y \arrow[dl, shift right, "\alpha"'] \arrow[dl, shift left, "\beta"] \\
& X \arrow[dl, shift right, "\alpha"'] \arrow[dl, shift left, "\beta"] \arrow[d, shift right, "\alpha"'] \arrow[d, shift left, "\beta"] \arrow[dr, shift right, "\alpha"'] \arrow[dr, shift left, "\beta"] & \\
Z & Z & Z
\end{tikzcd}
$$

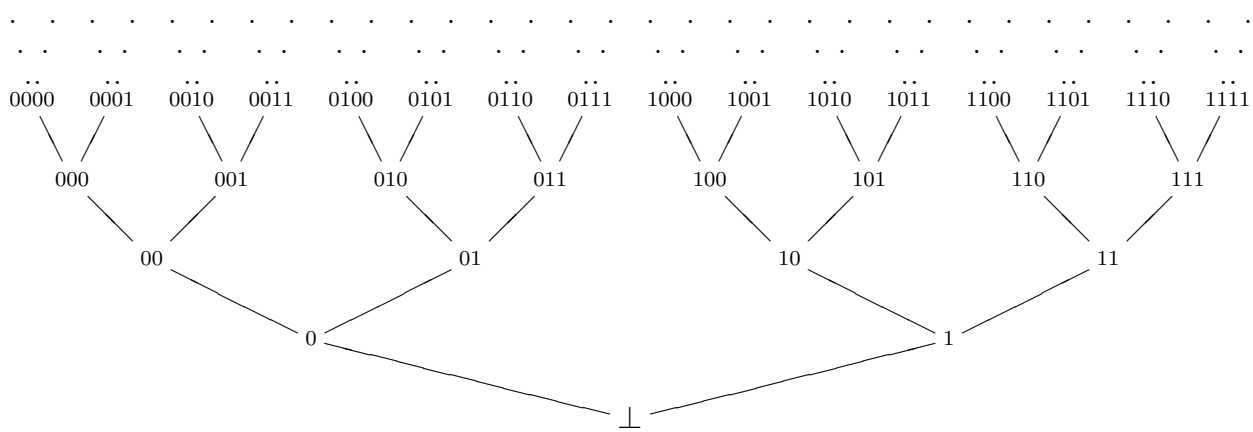
$$
\begin{tikzcd}
H \arrow[dr, "h", "H"'] & A & B \arrow[dl, "b", "B"'] \\
G & \dfrac{\sum_{i=0}^{100} x_i \cdot y_i}{\sqrt{\left(\sum_{i=0}^{100} x_i^2\right) + \left(\sum_{i=0}^{100} y_i^2\right)}} \arrow[ul, "g", "G"'] \arrow[u, "a", "A"'] \arrow[dl, "f", "F"'] \arrow[d, "e", "E"'] \arrow[dr, "d", "D"'] \arrow[r, "c", "C"'] & C \\
F & E & D \\
A \arrow[r, Rightarrow, "a", "A"', "b", "B"'] & C \arrow[d, Rightarrow, "c", "C"', "d", "D"'] & E \arrow[l, Rightarrow, "e", "E"', "f", "F"'] \\
 & \dfrac{\sum_{i=0}^{100} x_i \cdot y_i}{\sqrt{\left(\sum_{i=0}^{100} x_i^2\right) + \left(\sum_{i=0}^{100} y_i^2\right)}} \arrow[ul, Rightarrow] \arrow[ur, Rightarrow] & G \arrow[l, Rightarrow, "G", "g"', "H", "h"']
\end{tikzcd}
$$

$$
\begin{tikzcd}
 & & & & D_\infty \arrow[dddd, dashed, "\alpha_\infty"] \\
D_0 \arrow[r, shift left, "\phi_0"] \arrow[d, "\alpha_0"] \arrow[urrrr, shift left, "\Phi_0"] & D_1 \arrow[l, shift left, "\psi_0"] \arrow[r, shift left, "\phi_1"] \arrow[d, "\alpha_1"] \arrow[urrr, shift left, "\Phi_1"] & D_2 \arrow[l, shift left, "\psi_1"] \arrow[r, shift left, "\phi_2"] \arrow[d, "\alpha_2"] \arrow[ur, shift left, "\Phi_2"] & \cdots \arrow[l, shift left, "\psi_2"] \arrow[d, "\cdots"] \arrow[u, shift left, "\Psi_2"] & \\
D'_0 \arrow[r, shift left, "\phi'_0"] \arrow[urrrr, shift left, "\Psi'_0"] \arrow[drrrr, shift left, "\Phi'_0"] & D'_1 \arrow[l, shift left, "\psi'_0"] \arrow[r, shift left, "\phi'_1"] \arrow[urrr, shift left, "\Psi'_1"] \arrow[drrr, shift left, "\Phi'_1"] & D'_2 \arrow[l, shift left, "\psi'_1"] \arrow[r, shift left, "\phi'_2"] \arrow[ur, shift left, "\Psi'_2"] \arrow[dr, shift left, "\Phi'_2"] & \cdots \arrow[l, shift left, "\psi'_2"] \arrow[u, shift left, "\Psi_1"] & \\
 & & & & D'_\infty
\end{tikzcd}
$$

$$
\begin{tikzcd}
A_1 \arrow[rr, "\gamma_1"] \arrow[dr, "a_1"] \arrow[dd, "\alpha"] & & B_1 \arrow[dl, "b_1"'] \arrow[dd, "\beta"] \\
& A'_1 \arrow[r, "\gamma'_1"] \arrow[d, "\alpha'"] & B'_1 \arrow[d, "\beta'"] \\
& A'_2 \arrow[r, "\gamma'_2"] & B'_2 \\
A_2 \arrow[ur, "a_2"] \arrow[rr, "\gamma_2"] & & B_2 \arrow[ul, "b_2"]
\end{tikzcd}
$$

$$
\begin{tikzcd}
& A'_1 \arrow[rr, "\gamma'_1"] \arrow[dd, "\alpha'"] & & B'_1 \arrow[dd, "\beta'"] \\
A_1 \arrow[ur, "a_1"] \arrow[rr, "\gamma_1"] \arrow[dd, "\alpha"] & & B_1 \arrow[ur, "b_1"] \arrow[dd, "\beta"] & \\
& A'_2 \arrow[rr, "\gamma'_2"] & & B'_2 \\
A_2 \arrow[ur, "a_2"] \arrow[rr, "\gamma_2"] & & B_2 \arrow[ur, "b_2"] &
\end{tikzcd}
$$


$= 2$
∞
$= 1$
≥ 2
$= 0$
≥ 1
≥ 0


0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
000 001 010 011 100 101 110 111
00 01 10 11
0 1
$\perp$