Trying to minimize the non-linear function ***f*** :

$$\min(f) = \frac{a - \{(\sum X_i * Pb_i) + (\sum Y_i * Pp_i)\}}{\sum Z_i * Ps_i} - 1$$

Step 1

$$f + 1 = \frac{a - \{(\sum X_i * Pb_i) + (\sum Y_i * Pp_i)\}}{\sum Z_i * Ps_i}$$

Step2

$$set:\ g = f + 1$$

Step3

$$g = \frac{a}{\sum Z_i * Ps_i} - \frac{\sum X_i * Pb_i}{\sum Z_i * Ps_i} - \frac{\sum Y_i * Pp_i}{\sum Z_i * Ps_i}$$

Step4

$$set\ \ R = \frac{1}{Z}\ , S = \frac{X}{Z}\ \ and\ T = \frac{Y}{Z}\ \ so\ that\ we\ have:$$

$$g = \frac{a}{Ps_i} * R_i - \frac{Pb_i}{Ps_i} * S_i - \frac{Pp_i}{Ps_i} * T_i$$

Step5

$$set:\ b_i\ = \frac{a}{Ps_i}, c_i = \frac{Pb_i}{Ps_i}\ , d_i = \frac{Pp_i}{Ps_i}\ \ so\ that\ we\ have:$$

Final step

$$g =\ b_i\ * R_i - c_i * S_i - d_i * T_i$$

a is a constant and $\boldsymbol{b_i}$, $\boldsymbol{c_i}$ and $\boldsymbol{d_i}$ was already calculated.