Eliminate x'^2 from $\qquad$ given $x'^2 = y_1'^2[(n/p_y)^2 - 1] - 1$

$$y'^2 = \frac{x'^2(n^2 - p_x^2) - p_x^2}{p_x^2}$$

$$y'^2 = x'^2\left[\left(\frac{n}{p_x}\right)^2 - 1\right] - 1 .$$

$$y'^2 = \underbrace{\left[\left(\frac{n}{p_x}\right)^2 - 1\right]}_{\text{call this } \gamma_x}\left\{\underbrace{\left[\left(\frac{n}{p_y}\right)^2 - 1\right]}_{\text{call this } \gamma_y} y_1'^2 - 1\right\} - 1$$

$$y'^2 = \gamma_x(\gamma_y y_1'^2 - 1) - 1 .$$

$$y'^2 = \gamma_x \gamma_y y_1'^2 - \gamma_x - 1$$

$$y'^2(1 - \gamma_x\gamma_y) = -\gamma_x - 1$$

$$y'^2 = \frac{1 + \gamma_x}{\gamma_x\gamma_y - 1} = \frac{1 + (n^2/p_y^2) - 1}{\frac{n^4}{p_x p_y} - \frac{n^2}{p_x^2} - \frac{n^2}{p_y^2}}$$

$$\left[\left(\frac{n}{p_x}\right)^2 - 1\right]\left[\left(\frac{n}{p_y}\right)^2 - 1\right] = \frac{n^4}{p_x^2 p_y^2} - \frac{n^2}{p_x^2} - \frac{n^2}{p_y^2} + 1$$

$$y'^2 = \frac{n^2/p_y^2 \div n^2}{\left(\frac{n^4}{p_x^2 p_y^2} - \frac{n^2}{p_x^2} - \frac{n^2}{p_y^2}\right) \div n^2}$$

$$= \frac{1 \cdot p_x^2}{p_y^2\left(\frac{n^2}{p_x^2 p_y^2} - \frac{1}{p_x^2} - \frac{1}{p_y^2}\right) p_x^2}$$

$$y'^2 = \frac{p_x^2}{n^2 - p_y^2 - p_x^2}$$

Thus $\boxed{y' = \frac{p_x}{\sqrt{n^2 - p_x^2 - p_y^2}}}$ similarly for $\boxed{x' = \frac{p_1}{\sqrt{n^2 - p_x^2 - p_y^2}}}$