

$$\mathbf{5.13} \quad x^2 + y^2 = a^2 \iff \frac{x^2}{a^2} + \frac{y^2}{a^2} = 1 \iff \frac{x^2}{a^2} + \frac{\frac{b^2 y^2}{a^2}}{b^2} = 1 \iff \frac{x^2}{a^2} + \frac{(\frac{b}{a} y)^2}{b^2} = 1$$