Special forms of an Ellipse.

(1) If the centre of the ellipse is at point (h,k) and the directions of the axes are parallel to the coordinate axes, then its equation is $\frac{(x-h)^2}{a^2}+\frac{(y-k)^2}{b^2}=1$

If we shift the origin at (h, k) without rotating the coordinate axes, then $x = X + h$ and $y = Y + k$

(2) If the equation of the curve is $\frac{(lx+my+n)^2}{a^2}+\frac{(mx-ly+p)^2}{b^2}=1$ where $lx+my+n=0$ and $mx-ly+P=0$ are perpendicular lines, then we substitute $\frac{lx+my+n}{\sqrt{l^2+m^2}}=X, \frac{mx-ly+p}{\sqrt{l^2+m^2}}=Y$, to put the equation in the standard form.