We know the center $M = (x_m, y_m)$ and the values of $a$ and $b$. We want to calculate the curve points $P_0$, $P_1$ and $P_2$ and the weight $w$ to draw the ellipse. With $r = \sqrt{a^2 + b^2}$ we get:

$$
P_0 = \left( \frac{x_m - \frac{a^2}{r}}{y_m + \frac{b^2}{r}} \right) \quad P_1 = \left( \frac{x_m}{y_m + r} \right) \quad P_2 = \left( \frac{x_m + \frac{a^2}{r}}{y_m + \frac{b^2}{r}} \right) \quad w_0 = 1 \quad w_1 = \pm \frac{b}{r}$$ (1)

With these weights we can draw the ellipse with two segments. One segment uses the positive and the other the negative weight $w_1$. 

$\ell$