6. $r = \dfrac{2}{2 - \cos\theta}$

$= \dfrac{1}{1 - \frac{1}{2}\cos\theta}$ $\quad e = \frac{1}{2}$

ELLIPSE

$\theta = 0$

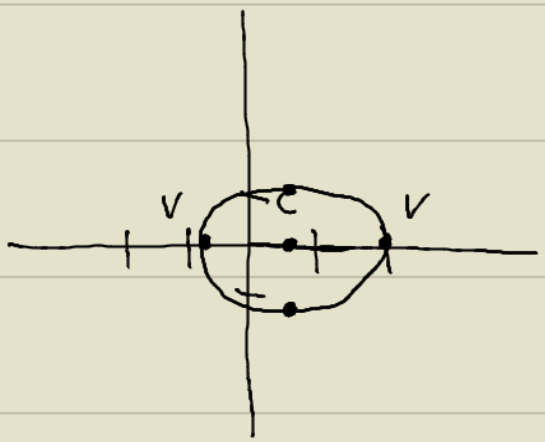
$r = \dfrac{2}{2 - \cos 0}$

$r = 2$

$\theta = \pi$

$r = \dfrac{2}{2 - \cos\pi}$

$r = \frac{2}{3}$



$\text{CENTER} = \dfrac{-\frac{2}{3} + 2}{2} = \dfrac{-2+6}{6} = \dfrac{4}{6} = \dfrac{2}{3}$

$a = \dfrac{\frac{2}{3} + 2}{2} = \dfrac{2+6}{6} = \dfrac{8}{6} = \dfrac{4}{3}$

$c = ea = \frac{1}{2}\left(\frac{4}{3}\right) = \frac{2}{3}$

$b = \sqrt{a^2 - c^2} = \sqrt{\left(\frac{4}{3}\right)^2 - \left(\frac{2}{3}\right)^2} = \sqrt{\frac{16}{9} - \frac{4}{9}} = \sqrt{\frac{12}{9}} = 1.15$