$$\left(\tau_r^2\right)\tau_c^2 + \left(\frac{\gamma-1}{2}M_0^2\tau_r - \tau_\lambda\tau_r - \tau_r^2\right)\tau_c + \tau_\lambda = 0$$

$$\tau_c = \frac{1}{2\tau_r^2}\left[\tau_\lambda\tau_r + \tau_r^2 - \frac{\gamma-1}{2}M_0^2\tau_r \pm \left\{\left(\frac{\gamma-1}{2}M_0^2\tau_r - \tau_\lambda\tau_r - \tau_r^2\right)^2 - 4\tau_r^2\tau_\lambda\right\}^{1/2}\right]$$

where

$$\tau_r = 1 + \frac{\gamma-1}{2}M_0^2$$

$$\pi_c = \tau_c^{\frac{\gamma}{\gamma-1}}$$

This gives two values of $\pi_c = 35.21$ and 0.0429, discard the 2nd since < 1.0

35.21 agrees with the plot and is between the computed values 35.164 and 35.242 that bracket $F = 0$

Note that the figures are consistent with the values in Oates Fig. 5.21 (which is calculated near these conditions)

5 values for $\pi_c > 35.21$ have to be discarded