



$\frac{MR^2}{2} = I_z$

$I_z = M \left[ \frac{R^2}{4} + \frac{r^2}{12} \right]$

$I_{DF} = M \left[ \frac{r^2}{3} + \frac{R^2}{4} \right]$

$I_z = \frac{Ml^2}{12}$

$I_{DF} = \frac{Ml^2}{3}$