

35. For the passenger jet $D_j = \frac{1}{2}C\rho_1Av_j^2$, and for the prop-driven transport $D_t = \frac{1}{2}C\rho_2Av_t^2$, where ρ_1 and ρ_2 represent the air density at 10 km and 5.0 km, respectively. Thus the ratio in question is

$$\frac{D_j}{D_t} = \frac{\rho_1 v_j^2}{\rho_2 v_t^2} = \frac{(0.38 \text{ kg/m}^3)(1000 \text{ km/h})^2}{(0.67 \text{ kg/m}^3)(500 \text{ km/h})^2} = 2.3 .$$