Isothermal approximation

Assumes: temperature doesn’t change (at different elevations)

This solution treats the air as an ideal gas. For an ideal gas, pressure is proportional to the air density .

= average mass of an air molecule

= Boltzmann’s constant

= absolute temperature

Adiabatic approximation

Assumes: the air is a poor conductor of heat and convection is very slow

\*much better approach for altitudes up to ~10 km.

( To be used for both )

= temperature @ sea level in kelvin K

= drag force at sea level