

A high-speed jet aircraft (i.e., MiG-21) is cruising at 10 km altitude. If a pitot-static probe measures a dynamic pressure of  $5.5 \times 10^3 \text{ N/m}^2$ , what is the calibrated airspeed (and Mach number) of this flight? Suppose, if the outside air temperature (OAT) is given to be  $-45^\circ\text{C}$ , what is the corresponding true airspeed (and Mach number) of this flight?

Lined area for notes, consisting of multiple horizontal dashed lines.