**Puzzle #19: Vacuum pump operating test for gas diffusive flow**

A vacuum pump pulls gas molecules down a long pipe by diffusion or convection. A technician must determine if the pump is making the gas move by diffusion instead of convection. In the former, the gas molecules move by random walk ("1 step back, 2 steps forward") while in the latter, all molecules move in the same direction. The Tech starts the gas flow and monitors the time the gas takes to reach specific locations along the pipe. The Tech then compares the gas movement with pump performance data from previous tests. She also knows that for short distances, gas moves faster by diffusion.

Curve (a) is operating curve for diffusive flow down pipe. (Yes or no) Please submit your answers at www.fl-ate.org.