

## AE 209 THERMODYNAMICS

## QUIZ 3

An oil pump is drawing 50 kW of electric power while pumping oil with  $\rho = 800 \text{ kg/m}^3$  at a rate of  $0.1 \text{ m}^3/\text{s}$ . The inlet and outlet diameters of the pipe are 0.08 m and 0.12 m, respectively. If the pressure rise of oil in the pump is measured to be 500 kPa and the motor efficiency is 80 percent, determine the mechanical efficiency of the pump.

