Quiz #4

MEMS 0051 - Introduction to Thermodynamics

Assigned: June 11th, 2020
Due: June 12th, 2020, 11:59 pm

Problem #1

Consider a piston-cylinder that contains 1 [kg] of air at a pressure and temperature of 200 [kPa] and 300 [K], respectively. The air now undergoes a polytropic process until it reaches a final pressure of 2200 [kPa]. If the polytropic index is n = 1.3 for this process, determine the following:

a) the final volume and temperature of the air;
b) the work performed during the process;
c) the heat transferred during the process;
d) the heat transferred during the process using Table A.7;
e) the percent error between the heat transfers using the answer determined from Table A.7 as the accepted value;

Academic Integrity Statement:

I hereby attest that I have received no assistance (from a friend, from another student, from an on-line resource, such as Chegg, etc.), and that I have provided no assistance to another student, during this examination. All the work presented within is solely my own work.

Signature: _____

Date: _____