

Name _____

Middle Name _____ Do you like your middle name? _____

Show your work, and circle your answers and use sig figs to receive full credit.

When you have finished this, go to the website and check your answers. If you got a problem wrong, cross it off on the front, and do it correctly on the back.

1. If you compress 16.0 liters of an ideal gas that is at 14.0 psi adiabatically (quickly) so that the pressure doubles, what is the new volume?

2A. A heat engine consumes 57 J of heat and does 23 J of work. What heat does it waste?

2B. A heat engine is 13.5% efficient. How much heat does it waste if it does 45.0 J of work?

3. A heat engine that has a Carnot efficiency of 56.0 % and has a cold temperature of 85.0 °C, has what as its hot temperature? (Answer in Celsius)

4-5: A heat engine does useful work at a rate of 219 Watts, and operates between a temperature of 317 °C and 37.0 °C. Assume it operates at full Carnot efficiency.

4. What is its Carnot efficiency?

5A. At what (Watt) rate is heat supplied to the heat engine?

5B. At what rate is heat wasted by the heat engine?