A-Day Due Fri., Jan 23
B-Day: Due Mon., Jan 26

2009 PreAP Thermo 2

1) Isothermal (T); Isovolumetric (V); Adiabatic (A)?
   A. ____ A tire being rapidly inflated.
   B. ____ A tire expanding gradually as it is heated.
   C. ____ A tire being heated with it is in a rigid metal container.
   D. ____ In a refrigerator when the compressor compresses the refrigerant quickly.
   E. ____ In a refrigerator when the refrigerant (which is in a metal tube) absorbs heat from the inside of the refrigerator.
   F. ____ In a refrigerator when the refrigerant expands quickly.
   G. ____ $Q = W$.
   H. ____ $\Delta U = 0$.
   I. _____ $\Delta U = Q$.

2) Positive, Negative, or Zero?
   A. ____ ΔU during an isovolumetric process if heat is removed.
   B. ____ Q in an isovolumetric process if ΔU is negative.
   C. ____ ΔU during an isothermal process.
   D. ____ Q in an adiabatic process if the gas expands.
   E._____ ΔU if $Q = W$.
   F._____ ΔU when positive work is done on the gas ($Q = 0$).
   G. ____ ΔU when negative work is done by the gas ($Q = 0$).
   H. ____ ΔU during an adiabatic expansion.
   I. _____ Work done by the gas when $Q = 0$, but temperature decreases.
   J. _____ Work done by the gas when the volume of the gas increases.
   K. ____ Q in an isothermal process if the gas compresses.
   L. ____ ΔU if $Q = 0$ and the gas is compressed.
   M. ____ Work done by the gas during an isovolumetric process.

3) An engine gains 2.56×10^7J of energy from combustion. If the engine expels 1.15×10^7J, how efficient is the engine?

4) If a refrigerator is left open in the middle of a room, does the room's overall temperature increase or decrease over time? (*Support your answer, of course*.)

5) Book Ch. 11 p. 431: Q 8, 9, 10, 11, 13, 14, 20, 28.

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