

Energy, Heat, and Work

1. Draw an energy diagram, and write a balanced chemical equation for the combustion reaction of propane. Label the initial and final energies. What is the sign of ΔE ?
2. Calculate the work done, in J, by a chemical reaction if the volume increases from 3.8 L to 4.1 L against a constant pressure of 2.9 atm. What is the sign of the change in energy?
3. A Big Mac has a caloric content of 550 Calories. How many hours would a 275 watt 46 inch plasma TV run with this amount of energy? (1 W = 1 J/s)
4. A system receives 626 J of heat from the surroundings. The system delivers 626 J of work to the surroundings. What is the change in the internal energy, ΔE , of the system (in J)?