9.33 A monatomic ideal gas that is initially at a pressure of 1.50×10^5 Pa and has a volume of 0.0800 m³ is compressed adiabatically to a volume of 0.0400 m³. (a) What is the final pressure? (b) How much work is done by the gas? (c) What is the ratio of the final temperature of the gas to its initial temperature? Is the gas heated or cooled by this compression?