Economics Paper instructions: 1. Suppose the California market for cannabis products is perfectly competitive, and the production of cannabis results in an externality in the form of water pollution from agricultural runoff. This market can be characterized by the following equations (where Q is expressed in thousands of pounds and P is dollars per pound): Inverse Market Supply: Inverse Market Demand: Marginal External Cost: PS = 1300 + 2.5Q PD = 2800 – 5Q MEC = 150 + 1.5Q a. Graph and solve for the market equilibrium price and quantity of cannabis. b. Graph and solve for the socially optimal price and quantity of cannabis (i.e., efficient solution). c. What are the social welfare gains from internalizing the externality? Indicate the area on the graph and solve for the actual number. d. Policymakers in California want to correct the market failure caused by the externality using a tax. What size of tax (in dollars per pound) should they impose? e. Why does the market equilibrium fail to be socially optimal in the presence of the externality, and how does a tax correct the market failure?