

5.13 Exercises

1. Identify one public good water use involving water supplied by an urban water utility. You must apply the two definitional requirements rigorously, and correctly argue that the conditions are met for the water use you have selected. Repeat this task for an irrigation district.
2. When it can be applied, the First Theorem of Welfare Economics has been referred to as “the public use of the private interest.” Explain the First Theorem in these terms.
3. List the four generic property forms that can be established for any resource. Attempt to identify real-world, nonwater examples for each, explaining why your examples are suitable.
4. Suppose that your state has historically applied the riparian doctrine, and that twenty years ago the state initiated a requirement that surface water diverters and ground water pumpers register for permits. Each permit indicates an allowed annual quantity of water use. Originally, these permits were viewed as term permits in that they expire after ten years unless renewed by the owner. A group of water users is now suing the state, not because they object to the permit system, but because they want the permits to be (a) permanent and (b) transferable. The general environmental lobby agrees, but they also want (c) a ban on the issue of any more permits and they want (d) all existing permits lowered by 20 percent. Critique these four policy elements from an economic perspective emphasizing the achievement of efficiency, and use your discussion to formulate a policy recommendation. Be clear about which policy elements are addressed by economic theory. Use no more than 400 words.
5. Invent an efficiency-advancing combination of the prior appropriations doctrine and centralized planning (regulation) for ground water depletion settings. For the institution(s) you design, which of these two elements of the combination would decide intertemporal and intratemporal allocations among agents? Compare this policy to the Vernon Smith system.
6. Legislators for a riparian doctrine watershed have decided to transition to a correlative rights system for their surface water. Now they must decide on how to distribute the limited water right shares across the many parties wanting them. Auctioning or pricing these new permits is not politically acceptable, so they will be given away. Many of the riparians have a long, documented history of water use and have made substantial investments. Other parties are growing and say they need more water. What recommendations on the initial distribution does economics have and why? What about giving everyone who signs up an equal share? Is a lottery a viable option?
7. An urbanized region has four important sectors of water demand for a river serving as the region’s sole water source. These sectors are residential, commercial, industrial, and recreational. Would you recommend enforced and transferrable rights to the river’s water for achieving optimal water allocation or would you recommend alternative policies? Why? Define and apply the relevant conceptual tools completely. If government decides to enact transferrable rights, how should the rights be initially assigned and why?