**Solutions to Chapter 2 Exercises**

**SOLVED EXERCISES**

S1. (a) Assuming a sufficient supply of yogurt is available for all shoppers, each shopper is simply making a decision. If some flavors of yogurt were in short supply, then it would be a game, because shoppers could, for example, make sure to arrive at the store early in order to get their preferred selections.

(b) Again, probably not a strategic interaction between mutually aware players. (There may be a strategic component to dress choice if the girls are aware that each is buying one and if there is some benefit to being different from the others.)

(c) For a college senior, the choice here is a decision, unless you argue that a game is being played with the student’s future self.

(d) This is a strategic interaction between mutually aware rival firms: a game with a small number of players.

(e) This interaction is both strategic and involves a large number of players: a game with many players.

(f) The choice of running mate is a game played between different presidential candidates looking forward to the payoffs of votes in an upcoming election: a game with a small number of players.

S2. (a) (i) Interests are totally in conflict (zero-sum); (ii) simultaneous play; (iii) fixed rules; (iv) symmetric imperfect information (neither player has information about the action being taken by the other); (v) can be repeated, although description is of a single play; (vi) cooperative agreements are unlikely.

(b) (i) Voters have some, but not all, interests in common (non-zero-sum game); (ii) sequential play; (iii) fixed rules; (iv) full information; (v) usually not repeated (though some bills may face multiple votes); (vi) party apparatus may provide mechanism for cooperation among members of the same party or even between parties.

(c) (i) Some interests in conflict (non-zero-sum); (ii) simultaneous play; (iii) fixed rules; (iv) imperfect information; (v) not repeated; (vi) cooperative agreements unlikely (noncooperative).

S3. False. This statement rules out the possibility that individuals may be concerned about fairness.

S4. To solve each problem, the probability of each event must be multiplied by its respective payoff, and then all the results must be added together for the expected payoff.

(a) Expected payoff = 0.5(20) + 0.1(50) + 0.4(0) = 15.

(b) Expected payoff = 0.5(50) + 0.5(0) = 25.

(c) Expected payoff = 0.8(0) + 0.1(50) + 0.1(20) = 7.

S5. Prediction is about looking into the future to foresee which actions and outcomes will arise, whereas prescription is about giving advice regarding which actions should be taken. Prediction is important for individuals outside a game who want to determine what will happen in it. Prescriptive game theory can be used to help game players make good choices.