2. Private companies frequently approach your consulting firm to undertake special projects and provide advice to management. As a senior consultant, one of your jobs is to quote a price for these projects based on an estimate of cost and firm resources (i.e., consultants available to work on them).

Your firm recognizes that it is competing with other consulting firms for its potential clients' business.

Over the last six months, you have bid on ten separate projects and have won nine of them. You are establishing a reputation as someone who really can bring in business. Some managers in the firm are worried, however, about a shortage of resources (i.e., available consultants) to complete these jobs. Is yours a "good" bidding record? Describe carefully how you make this assessment.

4. In many situations, a seller of an item entertains bids from a number of buyers but allows one buyer to obtain the good by *matching* the highest competing offer. Consider the owner of a house who must sell the property immediately. These are only two potential buyers, one of whom currently rents the house. The owner agrees to solicit a final price from the outside buyer and allow the renter to match it if he wishes. All the parties believe that the buyers' values for the house are independent of each other and that, for each buyer, values between $200,000 and $260,000 are equally likely.

a. How should the renter decide whether or not to match the outside offer?

b. What offer should the outside buyer make if her value is $240,000? More generally, what offer should she make as a function of her value, v?

c. What is the seller's expected revenue? Confirm that it is lower than under either the English or sealed-bid auctions.

6. A half-dozen firms are competing to secure a highway contract from a local government agency via sealed bid. When bids are opened, the winning firm's bid is 40 percent below the next-lowest bid.

a. How might you explain such a low bid? Given such a bid, what risks does the winning bidder face? Explain.

b. Is such a low bid unambiguously "good" for the government agency? What potential risk does the agency face? (In terms of the auctioning party's risk, how does a procurement differ from an auction sale?) How might the government agency protect itself from this risk?

10. Firms J and K are competing to supply high-tech equipment to a government buyer. Firm J's expected production cost is $105 million and its profit requirement (on top of this) is $5 million. (The firm demands this profit because it can earn this amount on a comparable contract.) Firm K has an expected cost of $95 million and a profit requirement of $7 million. The government buyer has limited information about the firms, so it does not know which has the lower total cost (direct cost plus profit).

   a. Suppose the government stipulates a cost-plus contract and plans to choose the firm that submits the lower-profit bid. Which firm will it select? Is the selection process efficient?
   b. Suppose, instead, that the government sets a fixed-price contract and the firms submit total cost bids. Which firm will be selected? Why might firms insist on a higher required profit under a fixed-price contract than under a cost-plus contract?
   c. Finally, suppose the government uses an incentive contract and sets the firm's sharing rate at $b = .25$ and the cost target at $c_T = 100$. Which firm can be expected to submit the lower required-profit bid? Will the efficient firm be selected?