9.B.9^B Consider a game in which the following simultaneous-move game is played twice:

			Player 2	
		b_1	b_2	b_3
	a_1	10, 10	2, 12	0, 13
Player 1	a_2	12, 2	5, 5	0, 0
	a_3	13, 0	0, 0	1, 1

The players observe the actions chosen in the first play of the game prior to the second play. What are the pure strategy subgame perfect Nash equilibria of this game?

9.B.10^B Reconsider the game in Example 9.B.3, but now change the post-entry game so that when both players choose "accommodate", instead of receiving the payoffs $(u_E, u_I) = (3, 1)$, the players now must play the following simultaneous-move game:

		Firm I	
		l	r
Firm E	U	3, 1	0, 0
	D	0, 0	x, 3

What are the SPNEs of this game when $x \geq 0$? When $x < 0$?

9.B.11^B Two firms, A and B, are in a market that is declining in size. The game starts in period 0, and the firms can compete in periods 0, 1, 2, 3, . . . (i.e., indefinitely) if they so choose. Duopoly profits in period t for firm A are equal to $105-10t$, and they are $10.5 - t$ for firm B. Monopoly profits (those if a firm is the only one left in the market) are $510 - 25t$ for firm A and $51 - 2t$ for firm B.

Suppose that at the start of each period, each firm must decide either to "stay in" or "exit" if it is still active (they do so simultaneously if both are still active). Once a firm exits, it is out of the market forever and earns zero in each period thereafter. Firms maximize their (undiscounted) sum of profits.

What is this game's subgame perfect Nash equilibrium outcome (and what are the firms' strategies in the equilibrium)?

Consider a duopoly with Cournot (quantity) competition. Let firm i's profit be quadratic: $\Pi^i = q_i(t_i - q_i - q_j)$, where t_i is the difference between the intercept of the linear demand curve and firm i's constant unit cost (i = 1, 2) and q_i is the quantity chosen by firm i ($a_i \equiv q_i$). It is common knowledge that, for firm 1, $t_1 = 1$ (firm 2 has complete information about firm 1). Firm 2, however, has private Information about its unit cost. Firm 1 knows only that $t_2 = \frac{3}{4}$ or $\frac{5}{4}$ with equal probabilities. Thus, firm 2 has two potential types, which we will call the "low-cost type" ($t_2 = \frac{5}{4}$) and the "high-cost type" ($t_2 = \frac{3}{4}$). The two firms choose their outputs simultaneously. Find a pure-strategy equilibrium.