More Limit Pricing

An incumbent firm (player 1) is either a low-cost type $\theta_1 = \theta_L$ or a high cost type $\theta_1 = \theta_H$, each with equal probability. In period $t = 1$, the incumbent is a monopolist and sets one of two prices, p_L or p_H, and its profits in this period depend on its type and the price it chooses, given by the following table:

Type	Profit from p_L	Profit from p_H
θ_L	6	8
θ_H	1	5

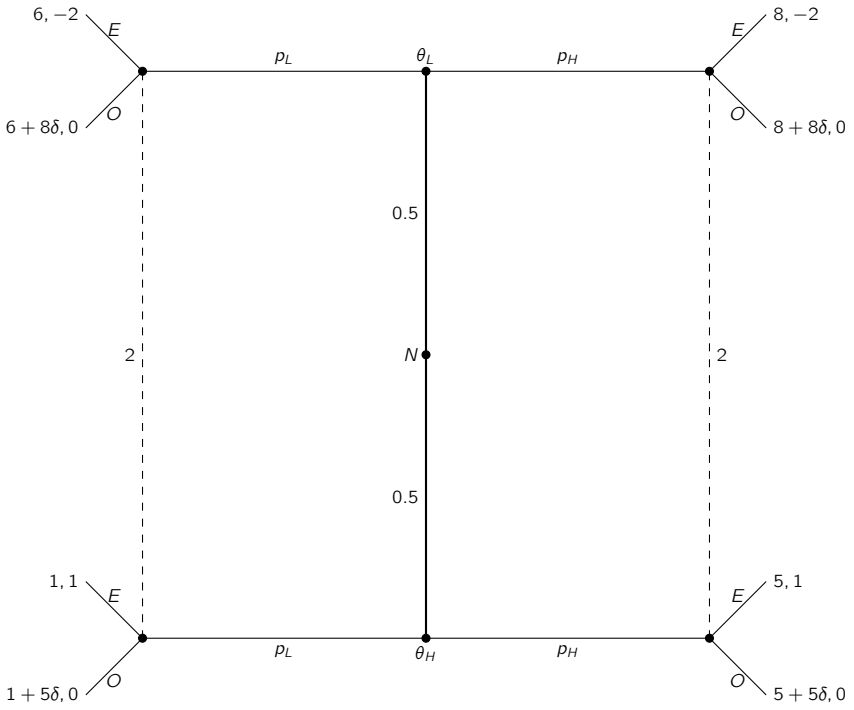
After observing the period $t = 1$ price, a potential entrant (player 2), which does not know the incumbent's type but knows the distribution of types, can choose to either enter the market (E), or stay out (O) in period $t = 2$. The payoffs of both players in period 2 depend on the entrant's choice and on the incumbent's type and are given by the following table:

Incumbent's type	Entrant's choice	Incumbent's payoff	Entrant's payoff
θ_L	E	0	-2
θ_L	O	8	0
θ_H	E	0	1
θ_H	O	5	0

At the beginning of the game the incumbent discounts profits for period $t = 2$ using a discount factor $\delta \leq 1$.

(a)

Draw the extensive-form game tree.



(b)

For $\delta = 1$ find a pooling perfect Bayesian equilibrium of the game in which both types of player 1 choose p_L in period $t = 1$.