Stage game G

Linear cournot oligopoly

$A_i = [0, \infty)$

$q_i \in A_i$ ← monopoly

$P(Q) \leftarrow \sum_{j \in N} q_j$

$u_i(q) = q_i [\max\{1 - Q, 0\} - c]$

infinitely repeated $G^{\infty, \delta}$

$u_i(s) = \sum_{t=0}^{T} \delta^t u_i(s(h_t)) \mid h$ is induced by s

per-period profit when each firm produces q

stage utility from BR-ing to everyone else producing q

$f(q) = q[\max\{1 - nq, 0\} - c]$

$g(q) = \max_{q'} q'[\max\{1 - (n-1)q - q', 0\} - c]$

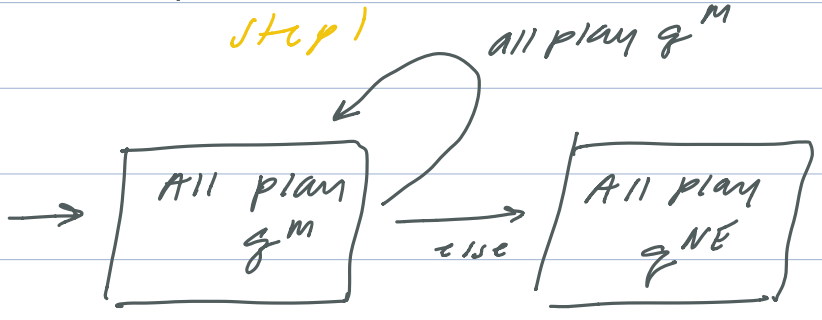
$= \max\left\{\frac{(1 - (n-1)q - c)^2}{4}, 0\right\}$

Grim Trigger to Nash

$s \rightarrow$

h_1, h_1, h_2, h_3

$1 - \alpha_t Q$



$$Q^m = \frac{1-c}{2} \qquad q^M = \frac{1-c}{2n} \qquad q^{NE} = \frac{1-c}{n+1}$$

Step 2

average discounted value V $= (1-\delta)\underbrace{PV}_{\text{I}}{}^m = f(q^m)$

$f(q^m) + \delta f(q^m) + \delta^2 f(q^m) + \dots$

$$V^{NE} = f(q^{NE}) = g(q^{NE})$$

In each stage, check deviation (one shot deviation)

↳ to check for subgame-perfect equilibria