

$$p = 1 - q \quad C = .4q$$

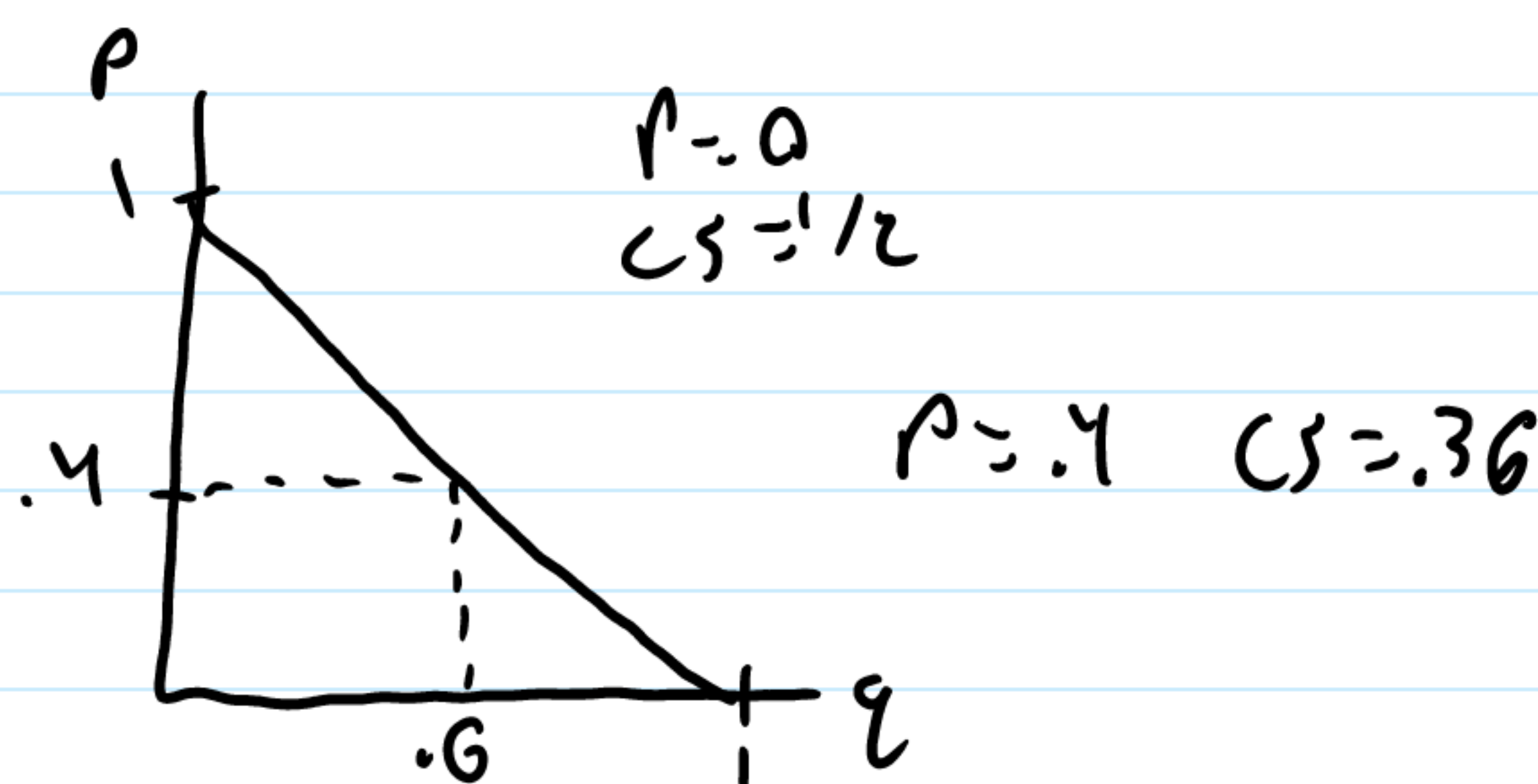
monopolist:

$$1 - 2q = .4$$

$$2q = .6$$

$$q = .3 \rightarrow p = .7$$

$$\pi = (.7 - .4) \cdot .3 = .09$$



$$p = .7$$

$$CS = .3 \cdot .3 / 2 = .045$$

$$DWL = 1/2 \cdot .3 \cdot .3 = .045$$

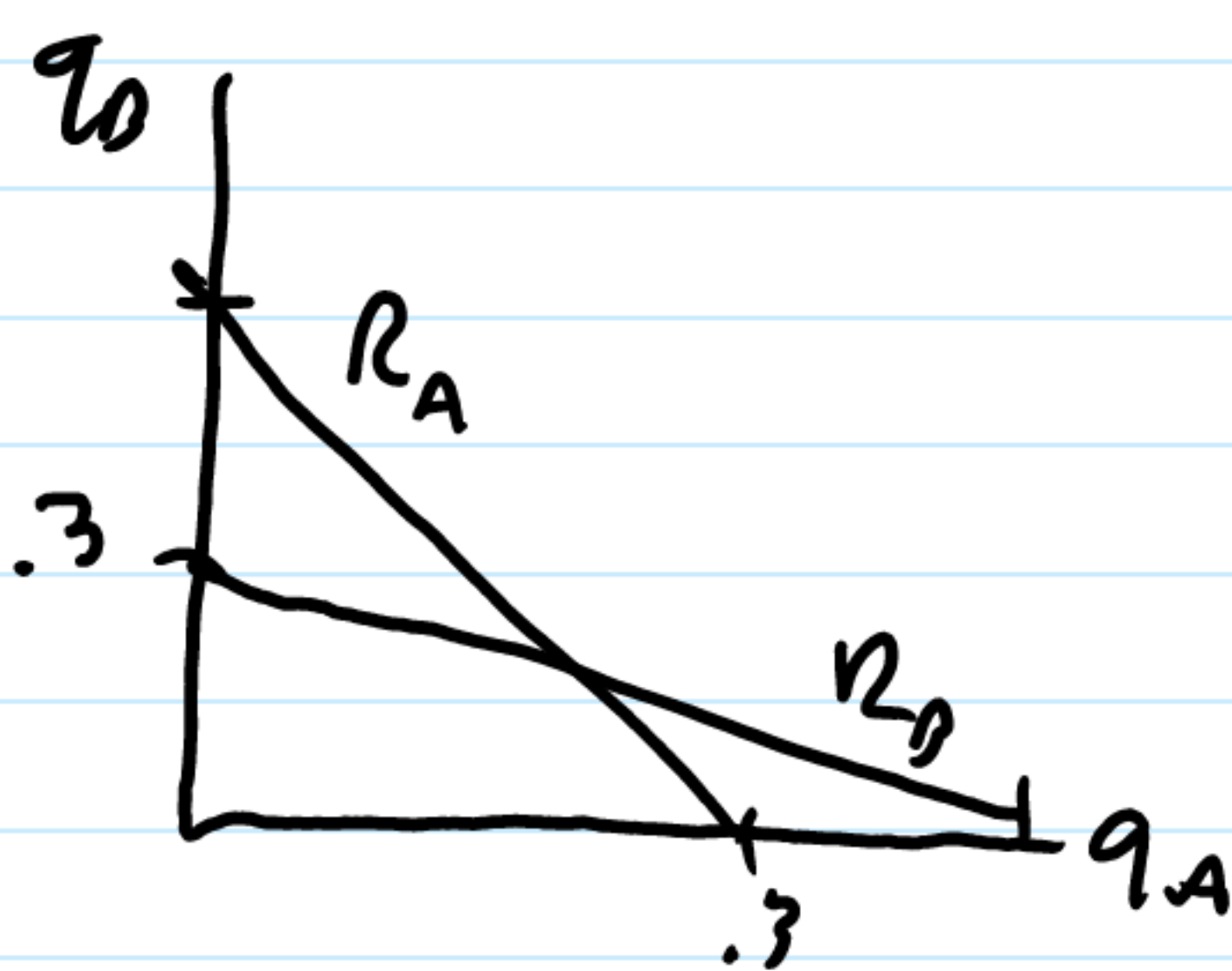
Cournot:

Alice + Bob

$$p = 1 - Q \quad Q = q_A + q_B$$

$$\pi_A = (1 - q_A - q_B)q_A - .4q_A$$

$$\frac{d\pi_A}{dq_A} = 1 - q_B - 2q_A - .4 = 0 \rightarrow 2q_A = .6 - q_B \rightarrow q_A = .3 - .5q_B$$



$$q_A + q_B = .9 \quad p = 1 - .4 = .6$$

$$\pi_A = (.6 - .4) \cdot .3 = .06$$

$$\pi_A + \pi_B = .08$$

$$CS = 1/2 \cdot .4 \cdot .4 = .08$$

Alice moves 1st

chooses  $C = .4q$  or  $C = F + .12$   $q \leq 1$  and  $q_A$

Bob moves second. Same choice

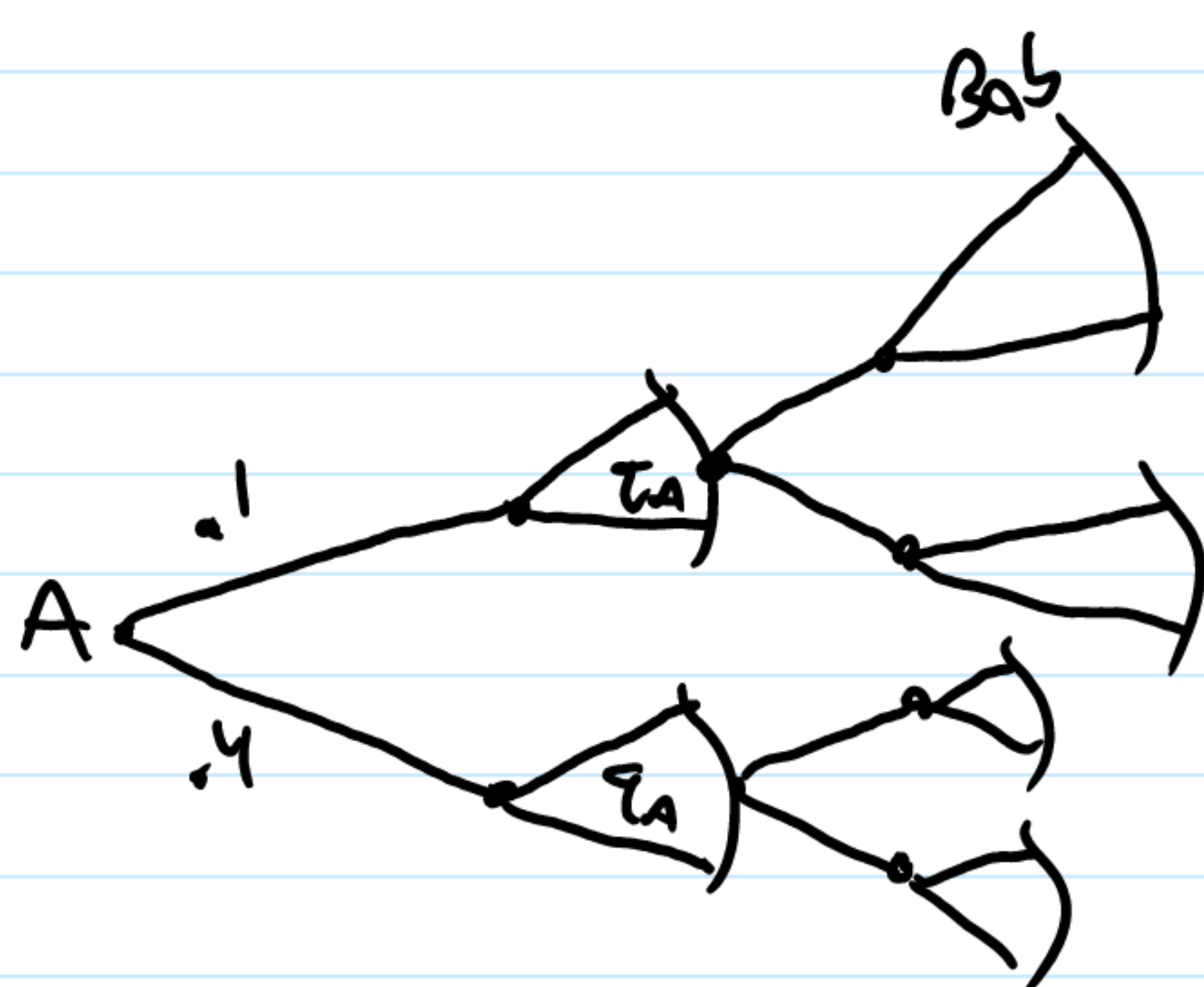
Largest  $F$  such that Alice chooses  $C = F + .12$



$$F + .1 = .4 \rightarrow F = .3$$

$$p = 1 - Q$$

$$p_A = (1 - q_A - q_B)q_A - .4q_A$$



$$(.9 - q_A)^2 / 4 - F < (.6 - q_A)^2 / 4$$

$$\pi_A = (1 - q_A)q_A - Cq_A$$