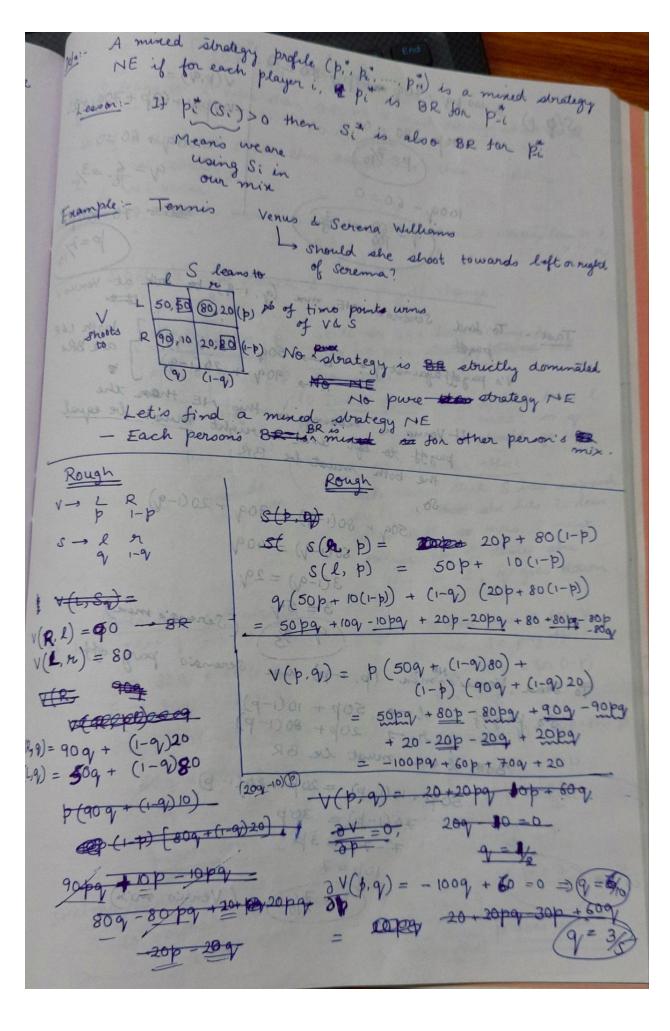
LECTURE - 9 Detn: A mixed strategy pi is a randomization over i's pure stratègies pi (Si) is the probability that pi assigns to the pure strategy Si · pi (Si) could be zero. (We need not involve all strategies in randomization) · A (Si) could be one I so pure strategy is special case e.g. in RPS (1,1,0) of mixed strategy Payoffs from Mixed Strategy The expected payoff of the mixed strategy is pi is the weighted average of the expected payoffs of each of the pure strategies in the min. 2,1 0,0 % Suppose $p = (\frac{1}{5}, \frac{4}{5}) \rightarrow player 1$ 0,0 1,2 % $q = (\frac{1}{2}, \frac{1}{2}) \rightarrow player 2$ What is po expected pay off...

1) Ask Eu, (A,9) = ½(2) + ½(0) = 1 Eu (B,q) = ½(0) +½(1) = ½ $E_{u_1}(p,q) = \frac{1}{3}(1) + \frac{4}{3}(\frac{1}{2}) = \frac{6}{10} = \frac{3}{5}$ Fu, (8,9) & Eu, (p,9) & Eu, (A,9) - In general it will be between payoff s of pure strategies If a mixed strategy is a BR then each of the pure stretegies in the min must themselves be BR, so in particular, each must yield the same expected Think about R, P, S mixed is BR that but R/P/S we payoff.

also BR for (3:3:3).



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S(Q, p) = 100 pg -70g = 60p+ 80=01
                                   v(p,q) =
                            -100 pg +60p +70g+20
                                     -1009 + 60 =0
           1009-60=0
 Task: - To find Sevena's HE min (q, 1-9) to look at Venus's
        Vis payoff against q = L-> 50q + 80 (1-9) } are 88,
                        R -> 909 + 20 (1-9)
         It Venus is mixing in this ME them the
              payoff to left and to right must be equal
               the both must be BR
            509 + 80(1-9) = 909 + 20(1-9)
                       60 (1-9) = 409
3(1-9) = 29

3 = 59

(Serena's min)

(p, 1-p) use Serena's pay off

To sind Venus's min (p, 1-p) use
                         3(1-9) = 29
   S's payof l > 50p + 10(1-p)
2 > 20p + 80(1-p)
   Both l'in must be BR
 50 p + 10 (1-p) = 20 p + 80 (1- p)
      76(1-p) = 30p
                  7-7p=3p
                    10p=7
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