

		Tanner		
		Like	Give Up	
Hanhan	Like	0.7, 0.7	0.1, 0.4	p
	Give up	0.5, 0.1	0.5, 0.4	1-p
		q	1-q	

“The trick to find Nash Equilibrium in mixed strategy is that players must choose their probability distribution over actions such that the other player is indifferent between the available action, so that the other player won’t have any incentive to deviate if he/she is indifferent between his/her actions.”

If Hanhan wants Tanner to be indifferent to his choice, **Hanhan’s strategy should be:**

$$0.7p + 0.1(1-p) = 0.4p + 0.4(1-p) \implies p=1/2 \implies \{\text{Like: } 1/2, \text{ Give Up: } 1/2\}$$

If Tanner wants Hanhan to be indifferent to her choice, **Tanner’s strategy should be:**

$$0.7q + 0.1(1-q) = 0.5q + 0.5(1-q) \implies q=1/2 \implies \{\text{Like: } 2/3, \text{ Give Up: } 1/3\}$$

Reality

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No wonder Hanhan doesn’t know what to do.....

But Tanner has already got a girlfriend....