4.3 Mixed Strategies

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Mixed Strategies

	C_1	C_2	C_3
R_1	4,1	1,1	2,5
R_2	2,2	0,0	3,3
R_3	2,5	1,1	1,4
	p_1	p_2	$1-p_1-p_2$

$\sigma_i \in \Delta S_i$

Sigma

$\theta_C = (.2, .2, .6)$

$\sigma_R (.7, 0, .3)$

↳ NOT θ_R R belief

$E(U_R)? = [.2 \cdot .2 \cdot 4 + .7 \cdot .2 \cdot 1 + .7 \cdot .6 \cdot 2] +$ (R_1C_1, R_1C_2, R_1C_3)

$0[.2 \cdot 2 + .2 \cdot 0 + .6 \cdot 3] +$

$.3[.2 \cdot 2 + .2 \cdot 1 + .6 \cdot 1]$ (R_2C_1) = R Player expected utility given mixed strategy + their beliefs about C's strategy

$$U_i(\sigma_i, \theta_{-i}) = \sum_{s_i \in S_i} \sum_{s_{-i} \in S_{-i}} \theta_i(s_i) \cdot \theta_{-i}(s_{-i}) \cdot U_i(s_i, s_{-i})$$