

7. In the normal-form game pictured below, is player 1's strategy M dominated? If so, describe a strategy that dominates it. If not, describe a belief to which M is a best response.

		2	
1		X	Y
	K	9, 2	1, 0
	L	1, 0	6, 1
	M	3, 2	4, 2

M is dominated by mixed strategy $\{K, L\}$

M does not dominate Player 1's response because in X, K is better and in Y, L is better.

$$\begin{aligned}
 9p + 1(1-p) &> 3 \\
 9p + 1 - p &> 3 \\
 8p + 1 &> 3 \\
 8p &> 2 \\
 p &> 1/4
 \end{aligned}$$

$$p > 1/4$$

$$\begin{aligned}
 1p + 6(1-p) &> 4 \\
 p + 6 - 6p &> 4 \\
 6 - 5p &> 4 \\
 -5p &> -2 \\
 p &< 2/5
 \end{aligned}$$

$$p < 2/5$$

$$\sigma = (.3, .7, 0)$$

$$\begin{array}{ccc}
 \uparrow & \uparrow & \uparrow \\
 p & 1-p & 0
 \end{array}$$