PS4, Ex. 1.b (A): MSNE and best-response functions

(b) Find all equilibria (pure and mixed), first analytically and then through plotting the BR functions.

		Player 2	
		L (q)	L (1-q)
Player 1	T (p)	3, 3	0, 0
	B (1-p)	0, 0	4, 4

Highlight the best responses in pure strategies.

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For which values of q is Player 1 indifferent?

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Find q such that Player 1 expect to have equal payoffs from playing T and B:

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$$E[u_1(T)|q] = E[u_1(B)|q]$$

$$3q = 4(1-q) \Rightarrow q = \frac{4}{7}$$

Write up all NE (pure and mixed).

$$NE = (p^*, q^*) =$$

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The players have symmetric payoffs, thus:

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Write up Player 1's best-response (BR) function, $p^*(q)$

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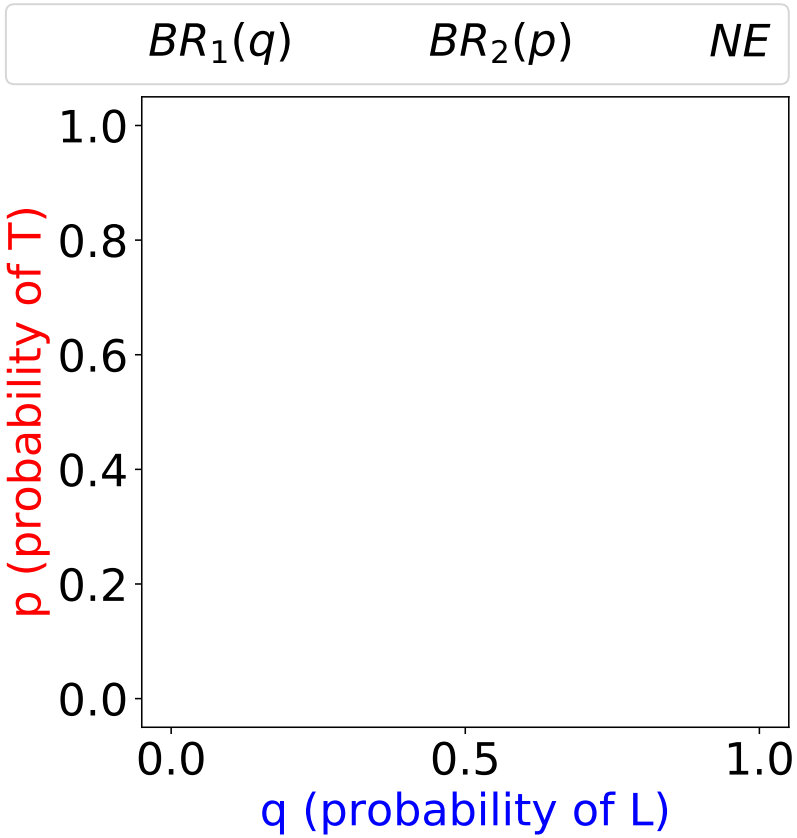
Plot Player 1's best-response (BR) function, $p^*(q)$

Write up and plot the BR functions:

$$BR_1(q) = \begin{cases} p = 0 & \text{if} \quad q < 4/7 \\ p \in [0,1] & \text{if} \quad q = 4/7 \\ p = 1 & \text{if} \quad q > 4/7 \end{cases}$$



PS4, Ex. 1.b (A): MSNE and best-response functions

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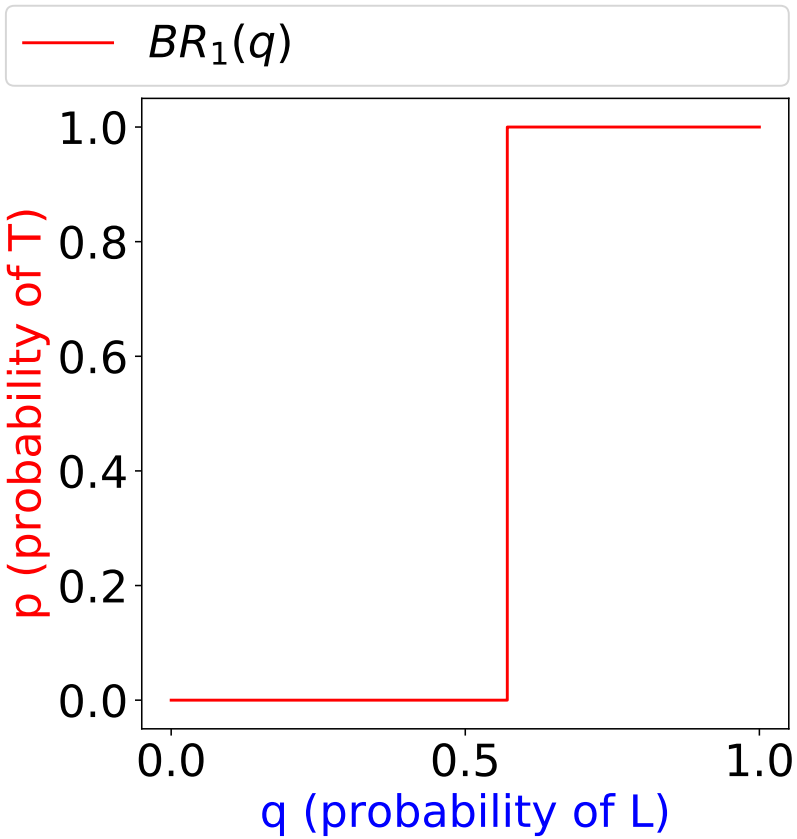

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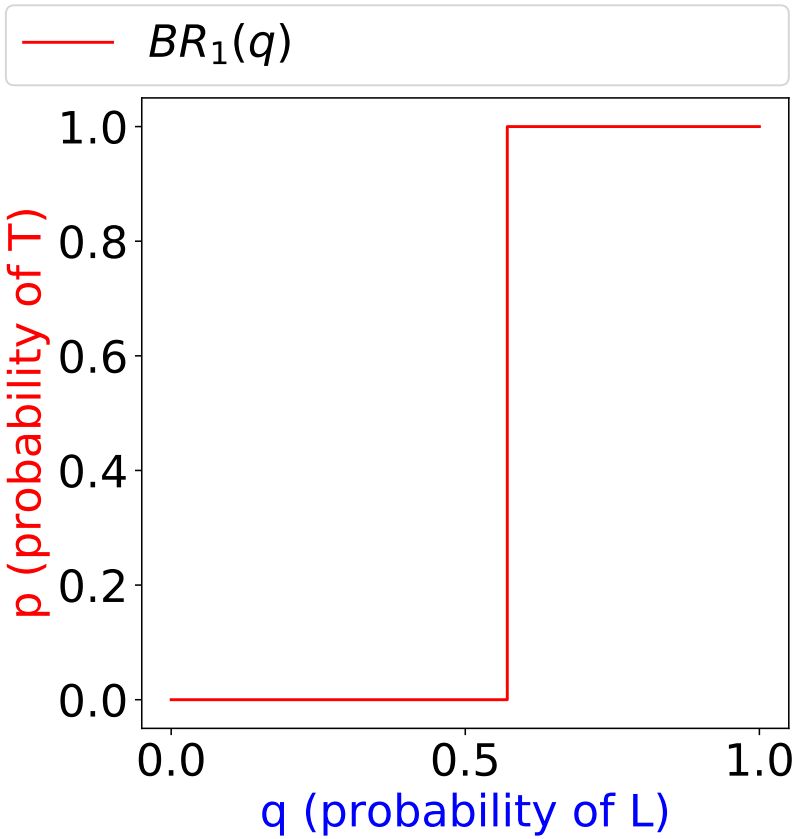

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