

Assesed solution review

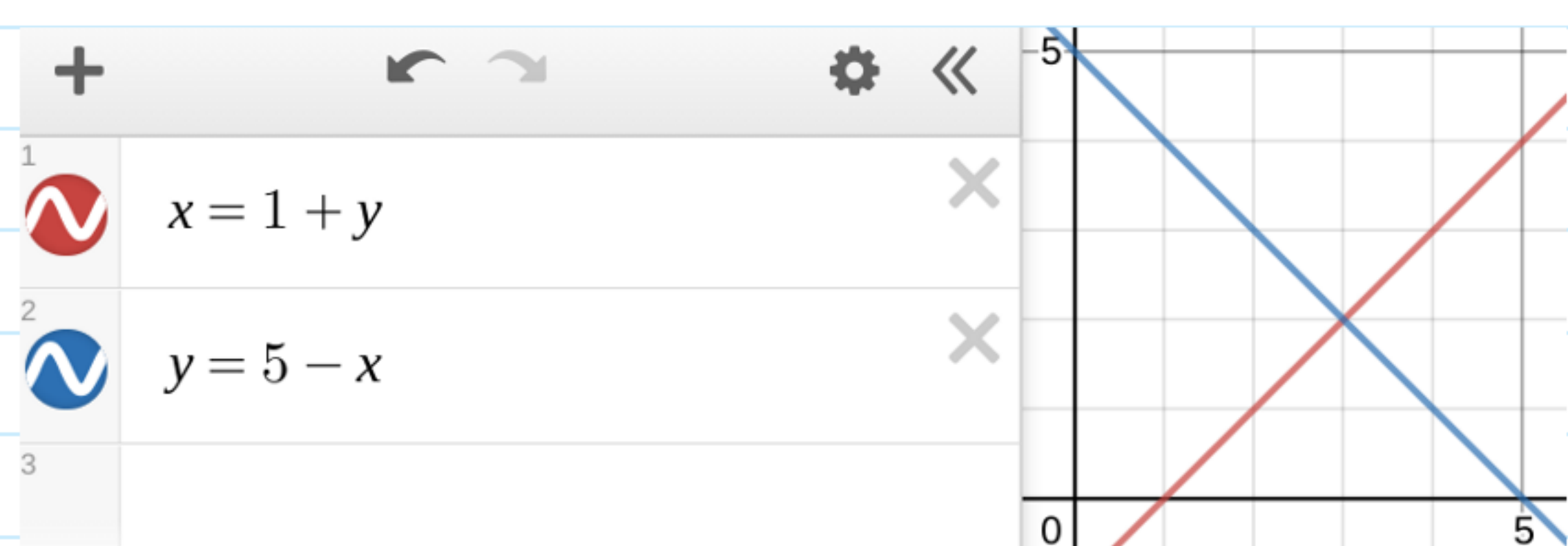
Consider a game in which, simultaneously, player 1 selects any real number x and player 2 selects any real number y . The payoffs are given by:

$$u_1(x, y) = 2x - x^2 + 2xy$$

$$u_2(x, y) = 10y - 2xy - y^2.$$

(a) Calculate and graph each player's best-response function as a function of the opposing player's pure strategy.

$$\begin{aligned} du_1/dx &= 2 - 2x + 2y \Rightarrow x = 1 + y \\ du_2/dy &= 10 - 2x - 2y \Rightarrow y = 5 - x \end{aligned}$$



(b) Find and report the Nash equilibria of the game.

$$\begin{aligned} x &= 1 + 5 - x \\ x &= 6 - x \\ 2x &= 6 \\ x &= 3 \end{aligned} \quad \begin{aligned} &\rightarrow y = 5 - 3 = 2 \\ &NE = (3, 2) \end{aligned}$$

(c) Determine the rationalizable strategy profiles for this game.

$$s = (3, 2)$$