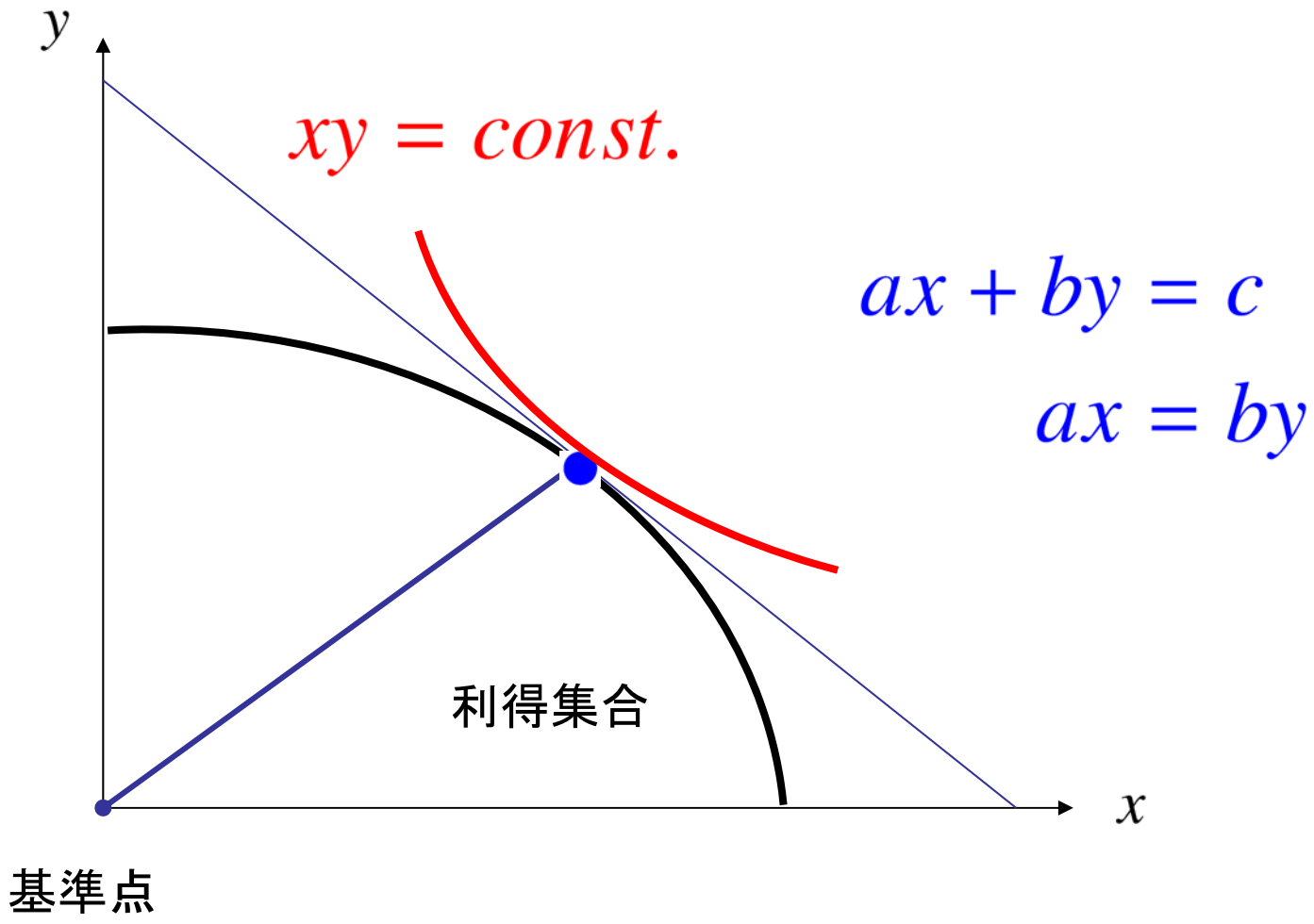
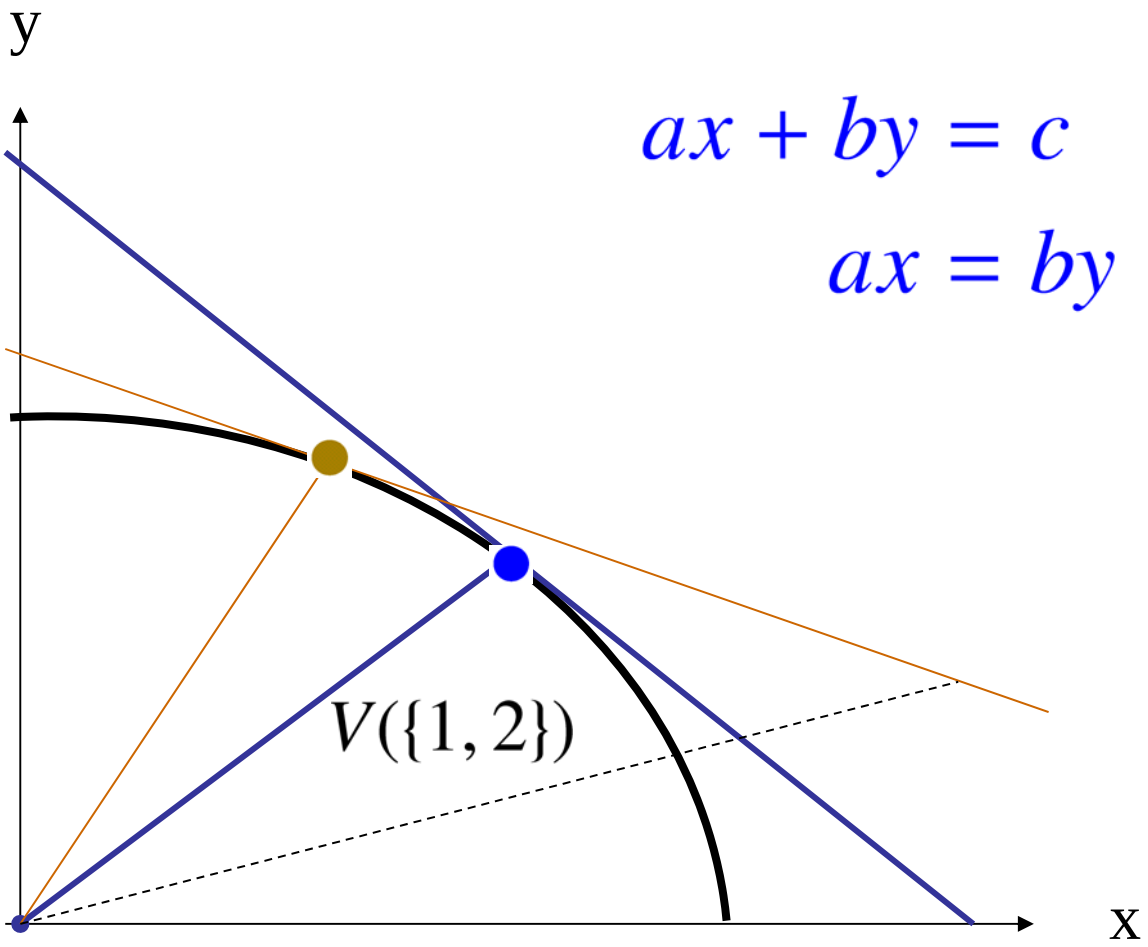
ナッシュ交渉解(Nash bargaining solution)





$V(\{1\}) = \{(x, y) \in \mathfrak{R}^2 | \; x \leq 0\},$

$V(\{2\}) = \{(x, y) \in \mathfrak{R}^2 | \; y \leq 0\}$

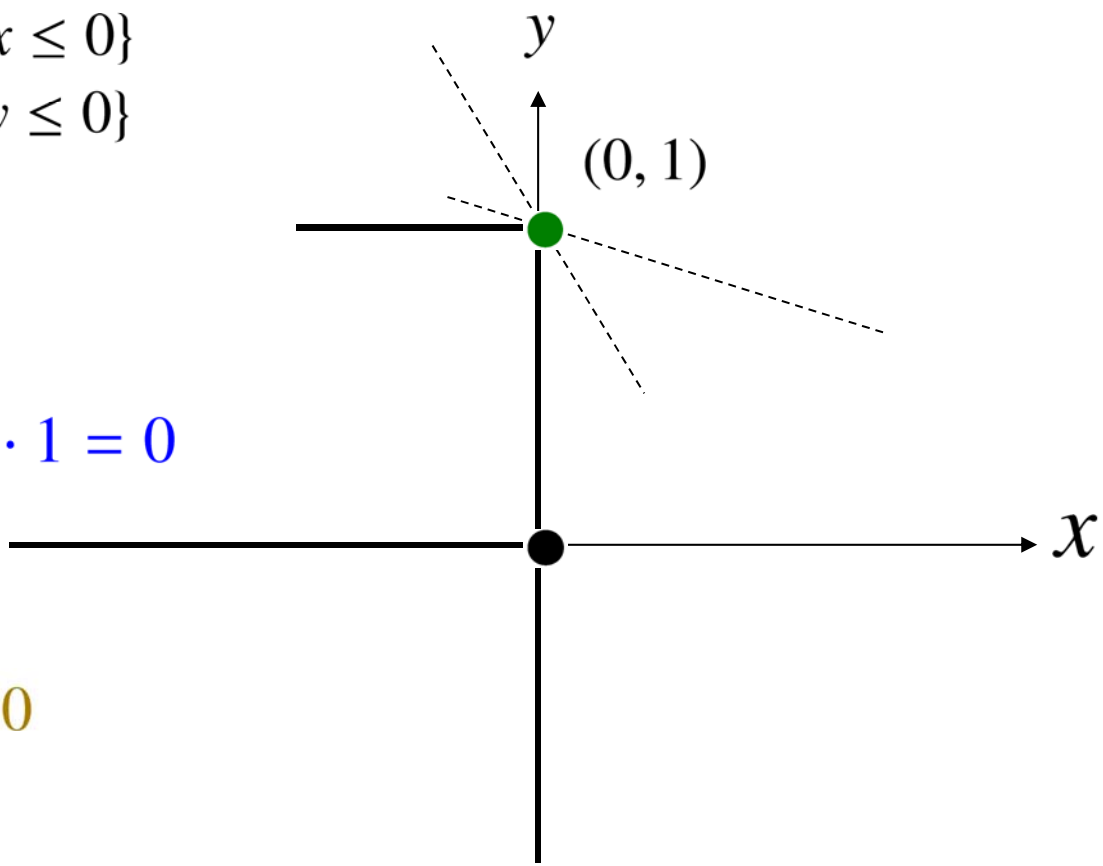
NTU Shapley Value

- Exercise: Compute and depict the NTU Shapley Value of the following game:

$$V(\{1,2\}) = \{(x,y) \in \mathfrak{R}^2 | x \leq 0,\ y \leq 1\}$$
$$V(\{1\}) = \{(x,y) \in \mathfrak{R}^2 | x \leq 0\}$$
$$V(\{2\}) = \{(x,y) \in \mathfrak{R}^2 | y \leq 0\}$$

Answer: NTU Shapley Value

$$V(\{1,2\}) = \{(x,y) \in \Re^2 | x \le 0,\ y \le 1\}$$
$$V(\{1\}) = \{(x,y) \in \Re^2 | x \le 0\}$$
$$V(\{2\}) = \{(x,y) \in \Re^2 | y \le 0\}$$



$$\lambda = (1,0)$$
$$v_\lambda(\{1\}) = v_\lambda(\{2\}) = 0$$
$$v_\lambda(\{1,2\}) = 1 \cdot 0 + 0 \cdot 1 = 0$$

$$\lambda = (\lambda_1, \lambda_2) = (1,0)$$
$$(\phi(v_\lambda))_1 = (\phi(v_\lambda))_2 = 0$$
$$\lambda_1 \cdot 0 = (\phi(v_\lambda))_1$$
$$\lambda_2 \cdot 1 = (\phi(v_\lambda))_2$$
$$(0,1) \in V(\{1,2\}) : \text{NTU value}$$