

EXAMPLE 1

$$\ddot{x} + 2\dot{x} = u,$$

$$\ddot{y} + 0.2\dot{y} + y = v$$

$$t \in [0, 20], \quad x, y \in \mathbb{R}^2,$$

$$u \in P = \left\{ u : \frac{u_1^2}{0.8^2} + \frac{u_2^2}{0.4^2} \leq 1 \right\},$$

$$v \in Q = \left\{ v : \frac{v_1^2}{1.5^2} + \frac{v_2^2}{1.05^2} \leq 1 \right\},$$

$$\text{Payoff: } \varphi(x(T), y(T)) = |x(T) - y(T)|.$$