

**Equações de
Bellman**

$$U^{\pi}(s) = \mathbb{E} \left\langle r_1 + \gamma r_2 + \gamma^2 r_3 + \dots \right\rangle$$

$$= \mathbb{E} \left\langle r_1 + \gamma U^{\pi}(s') \right\rangle$$

$$= \sum_a \pi(s, a) \sum_{s'} T(s, a, s') \left[R(s, a, s') + \gamma U^{\pi}(s') \right]$$