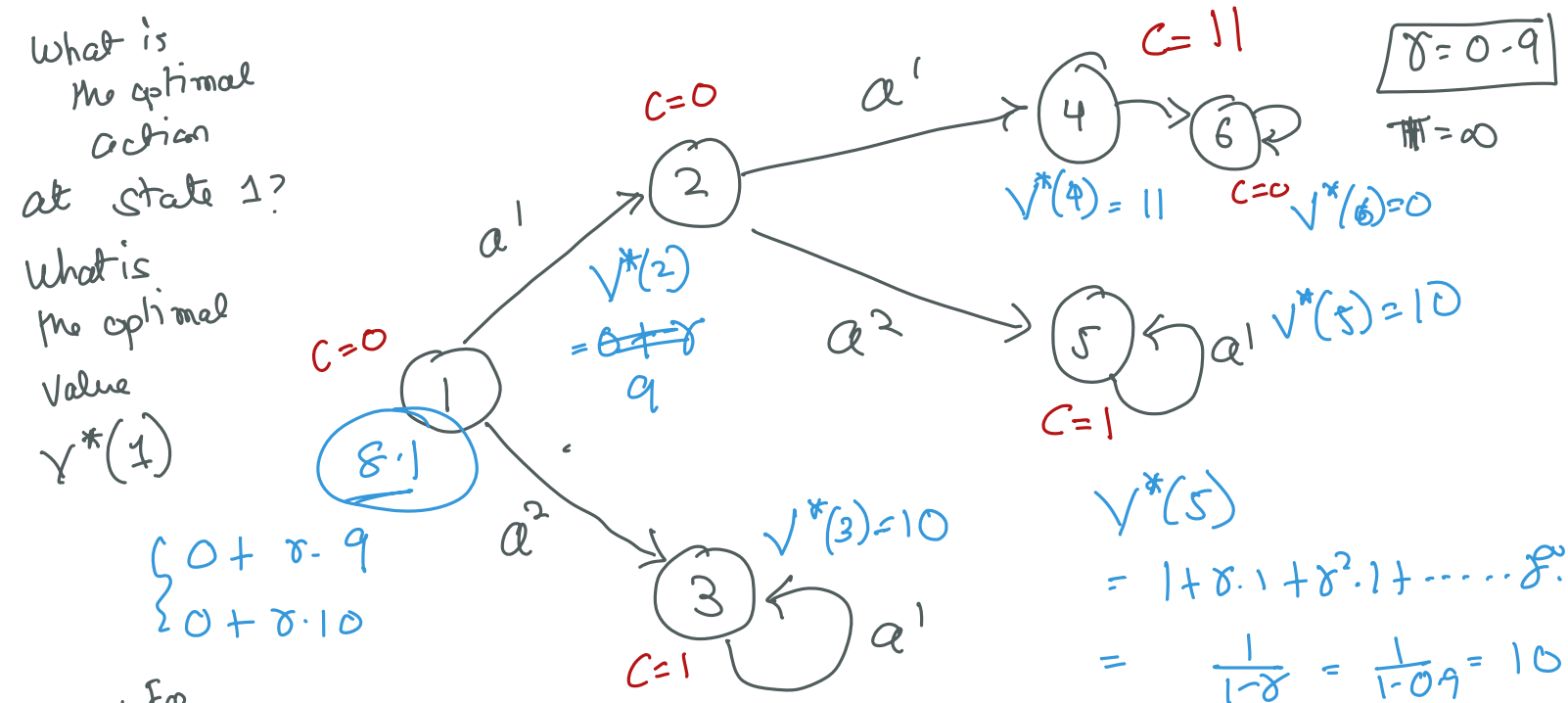

BELLMAN EQ

$$V^*(s) = \min_a \left[C(s,a) + \gamma \, V^*(s') \right]$$

$s' \sim T(s,a)$

$$V^*(2) = \begin{cases} a^1 & 0 + \gamma \cdot 11 \\ a^2 & 0 + \gamma \cdot 10 \end{cases} \Big\} \min = \gamma \cdot 10 = 9$$

$$V^*(5) = 1 + \gamma \cdot 1 + \gamma^2 \cdot 1 + \cdots + \gamma^\infty \cdot 1$$

$$= \frac{1}{1-\gamma} = \frac{1}{1-0.9} = 10$$

$$V^*(5) = 1 + \gamma V^*(5)$$

$$V^*(s) = \frac{1}{1-\gamma}$$