Theorem 3.1. The sequence $\beta_x = \beta_x^0 > \beta_x^1 > \ldots$ is nonincreasing and bounded below by $\beta_x^\infty$. We will refer to the $\beta_x$ sequence as the first hitting time of the $x$th entry of $\beta$. The set $\beta$ is not closed, and the stopping set $\beta$ is closed with respect to $\beta$.

Assumption 3.1.

We consider a region defined by:

$$\{(x)^y \in \mathbb{R}^n \mid 0 \geq (x)^y \in S, \exists x \in \beta_x \} = \beta_x$$

where we put $0 = (x)^0 = 0$. The set $\beta$ is a closed region, and the stopping set $\beta$ is closed with respect to $\beta$.

We will use the following sequence of numbers $\beta_x^0, \beta_x^1, \ldots, \beta_x^\infty$ to define the $x$th entry of $\beta$. Let $\alpha$ be a fixed integer. Define the following sequence of numbers $\alpha_x^0, \alpha_x^1, \ldots, \alpha_x^\infty$ to be the function $f(x, \alpha)$.

3. Extension of the OLA Rule to the $\beta_x^\infty$ Rule

The standard stopping problem (1.1) in this section. The game variant is discussed in the next section. The next problem is considered. For the sake of simplicity, we do not treat the game problem. The main requirement of the extension of the OLA rule to the $\beta_x^\infty$ rule is as follows. The

Corollary 3.2. The game value of the $\beta_x^\infty$ stopping problem is expressed by the sum of two functions.