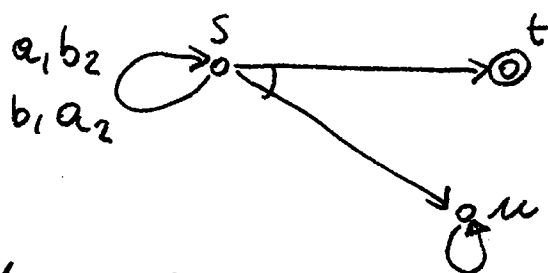


Homework Problem

Consider a game as follows:



$$\Gamma_1(s) = \{a_1, b_1\}$$

$$\Gamma_2(s) = \{a_2, b_2\}$$

Where, from s:

a_1, b_2 goes to s.

b_1, a_2 goes to s.

a_1, a_2 goes to $\begin{cases} u \text{ with prob. } \frac{1}{2} \\ t \text{ with prob. } \frac{1}{2} \end{cases}$

b_1, b_2 goes to $\begin{cases} u \text{ with prob. } \frac{3}{4} \\ t \text{ with prob. } \frac{1}{4} \end{cases}$

This can be summarized as follows:

	a_2	b_2
a_1	$\frac{1}{2}u, \frac{1}{2}t$	s
b_1	s	$\frac{3}{4}u, \frac{1}{4}t$

Problem: compute

$$(\langle 1 \rangle \circ \{t\})(s)$$

That is,

$$\sup_{\pi_1} \inf_{\pi_2} \text{Pr}_s^{\pi_1, \pi_2} (\underbrace{\circ \{t\}}_{\text{reading } t})$$

and show that it is irrational.

Hint: consider $X(u) = 0$
 $X(t) = 1$

and set $X(s) = q$ as before.

Then, compute

$$\text{QPr}(X)(s) \text{ as before.}$$

Now, solve for:

$$q = \text{QPr}(X)(s)$$

This gives you the fixpoint value of $X(s) = q$.