Day 8: Homework

Question :

Consider the game we considered in class, with $V < C$.

	FIGHT	SHARE
FIGHT	$(\frac{V-C}{2}, \frac{V-C}{2})$	$(V, 0)$
SHARE	$(0, V)$	$(\frac{V}{2}, \frac{V}{2})$

We calculated that $\frac{V}{C} FIGHT + \left(1 - \frac{V}{C}\right) SHARE$ for both players was the mixed Nash equilibrium strategy. Assume that we have a population of animals that all use this Nash strategy. Introduce a small number of mutant animals that always choose to FIGHT instead.

(a) Calculate the payoff of a normal animal against a mutant.

(b) Calculate the payoff of a mutant against another mutant.

(c) Use Theorem 3 in the worksheet. Is the Nash strategy also an Evolutionary Stable Strategy? (remember that $V - C$ is negative!)