Assignment 5
Temporal Probability Model and Optimal Policy

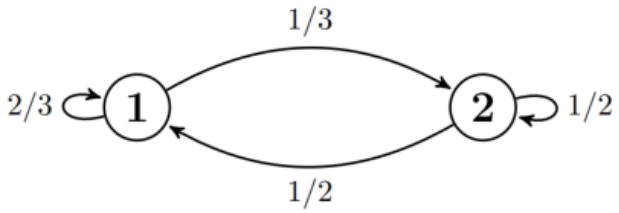
Note: please submit the solution in pdf format.

Problem 1.

Please watch the "Lecture 14 - Rational Decision (part 2): Discounting section" for the description of the problem.
Question: For which γ are left and right equally good when in state b? Please explain it mathematically.

Problem 2.

Consider a Markov chain for X specified by the following transition diagram. Please express all final answers as simplified fractions.



2.1. Given that $X_0 = 1$, find $P(X_1)$ and $P(X_2)$.

$P(X_1 = 1)$ = _____

$P(X_1 = 2)$ = _____

$P(X_2 = 1)$ = _____

$P(X_2 = 2)$ = _____

2.2. Find $P(X_\infty)$, the stationary distribution of our Markov Chain.

$P(X_\infty=1)$ = _____

$P(X_\infty=2)$ = _____