COMPSCI 687 Pop Quiz 3

Name: _____

Instructions. This quiz is closed book and closed notes. You may not communicate with any other students or use any electronic devices. You have **5 minutes** to complete the quiz. As discussed in class, answers must be **perfect down to the symbol** to receive credit. Each question is graded as either correct or incorrect; there is no partial credit. **If your name is not legible, you will receive a 0 on the quiz.**

1. π is called a:

2. Give the definition of π. Your answer should be two lines. The first specifies the input and output sets (e.g., $f : \mathcal{X} \to \mathcal{Y}$) and the second should specify the function values (e.g., $f(x) = \Pr(X = x)$). You may omit the quantifiers (e.g., $\forall x \in \mathcal{X}$).

3. Give the definition of G:

4. Give the definition of G_t:

5. Give the definition of H_t:

6. Give the definition of J. Your answer should be two lines. The first specifies the input and output sets (e.g., $f : \mathcal{X} \to \mathcal{Y}$) and the second should specify the function values (e.g., $f(x) = \Pr(X = x)$). You may omit the quantifiers (e.g., $\forall x \in \mathcal{X}$).

7. Give the definition of v^π. Your answer should be two lines. The first specifies the input and output sets (e.g., $f : \mathcal{X} \to \mathcal{Y}$) and the second should specify the function values (e.g., $f(x) = \Pr(X = x)$). You may omit the quantifiers (e.g., $\forall x \in \mathcal{X}$).

8. For the 6-state chain MDP used in lecture to define state-value functions, what is $p(s_\infty, a, s_\infty)$ equal to?