

For each of the following assertions, say whether it is true or false and support your answer with examples or counterexamples where appropriate:

- Given Information, make the right decision.
- a. An agent that senses only partial information about the state cannot be perfectly rational? *True, because if you can't fully see the whole picture, the decision isn't rational.*
- b. There exist task environments in which no pure reflex agent can behave rationally. *True, there are env. where you need to know information from prev. experience to be rational.*
- c. There exists a task environment in which every agent is rational.

d. The input to an agent program is the same as the input to the agent function.

*False*

e. Every agent function is implementable by some program/machine combination.

f. Suppose an agent selects its action uniformly at random from the set of possible actions.

*True*

g. There exists a deterministic task environment in which this agent is rational.

h. It is possible for a given agent to be perfectly rational in two distinct task environments.

*True*

i. Every agent is rational in an unobservable environment. *True*

j. A perfectly rational poker-playing agent never loses.

*False,*

For each of the following activities, give a PEAS description of the task environment as discussed in the previous class.

a. Playing soccer.

P: scored goals

S: eyes,

E: the field, players, and ball

A: Player's legs and hand

b. Exploring the subsurface oceans of Titan.

P: Area traversed, data gather

E: Water

A: turbine propeller, steering

Sensor: camera, GPS,

c. Shopping for used AI books on the Internet.

P:

partial observable

d. Playing a tennis match.

P: points scored

e. Practicing tennis against a wall

f. Performing a high jump.

g. Knitting a sweater.

h. Bidding on an item at an auction.