

Midterm Test

signature :

This test has (at least one) correct solution. If there are several correct solutions, any of them will be accepted. An "if..then" proposition said by an inhabitant must be interpreted as a material conditional, but it must be interpreted as a logical inference when in the test table.

	Question	Answ
1	C is a Knave.	X
2	If B is a Knight, then Y is guilty.	2
3	D's statement	2
4	E's statement	2
5	F's statement	1
6	If exactly one is guilty, then Y is guilty.	1
7	If exactly two are guilty, then X is innocent.	2
8	If C is a Knight, then Y is guilty.	1
9	If Z is innocent, then Y is guilty.	1

Fill the answer cell row by row. The answer codes are: 1,2,X
 1 , it follows from the informations that the statement is true,
 2 , it follows from the informations that the statement is not true,
 X , elsewhere (= there is no telling).

There are nine people A,B,C,D,E,F,X,Y,Z, from the island of Knights and Knaves, each of whom is either a Knight (he always tells the truth) or a Knave (he always lies).

A robbery occured, no one other than X,Y,Z, was involved, and at least one of them is guilty. Inhabitants A,B,C,D,E,F,X,Y,Z all take in the situation and are familiar with elementary logics.

Find a correct answer (one of the correct answers) using the following informations:

A says: "C is a Knight".

B says: "C is a Knave".

A says: "if X is guilty then Y is guilty".

B says: "if Y is guilty then Z is guilty".

C says: "Z is innocent".

D says: "Third position of a correct answer is 1".

E says: "third and fourth positions of a correct answer are equal and D is a Knave".

F says: "there are exactly two 1's in the first five positions of a correct answer".

Scores: a correct position: 10 points, an empty position: 4 points, a wrong position 0 point.