

Knights and Knaves Puzzles:

You visit an island containing two types of people: knights who always tell the truth and knaves who always lie.

Puzzle 1: You are approached by two islanders A and B who say the following to you:

A says: B is a knight. B says: A and I are of opposite type.

What are A and B ? ***Justify your answer!***

Puzzle 2: You are approached by two other islanders C and D who say the following to you:

C says: Both of us are knights. D says: C is a knave.

What are C and D ? ***Justify your answer!***

Puzzle 3: You are approached by yet another pair of islanders E and F but only E speaks:

E says: Both of us are knaves.

What are E and F ? ***Justify your answer!***

Puzzle 4: You are approached by a fourth pair of islanders G and H who say the following:

G says: H is a knave. H says: G is a knave.

How many knaves are in this pair? ***Justify your answer!***

Mystery Puzzles:

Puzzle 1: The famous detective Samantha Spade was called to solve the following murder mystery at a formal a formal *catered* dinner party held at Professor Quark's home. Among those present are Prof. Quark, Prof. Quark's wife Ann, Ann's sister Emma, Prof. Quark's thesis student, the caterer, the caterer's waiter and the caterer's wine steward. Detective Spade determined the following facts:

- a. Prof. Quark, the victim, was killed by a blow on the head with a heavy laptop.
- b. Either Ann or Emma was in the dining room at the time of the murder.
- c. If the caterer was in the kitchen, then the waiter killed Prof. Quark with a fatal dose of hemlock.
- d. If Ann was in the dining room at the time of the murder, the thesis student killed Prof. Quark.
- e. If the caterer was not in the kitchen at the time of the murder, then Emma was not in the dining room when the murder was committed.
- f. If Emma was in the dining room at the time of the murder, then the wine steward killed Prof. Quark.

Assuming there was only one cause of death, is it possible for Detective Spade to deduce the identity of the murder of these facts? If so, who murdered Prof. Quark? ***Justify your answer!***

Puzzle 2: Mr. Big, king of the underworld, was killed by one his own band of four henchmen. Detective Kolombo interviewed the men and deduced all were lying except for one. Detective Kolombo decided who killed Mr. Big on the basis of the following statements:

- a. Shorty: Lefty killed Mr. Big
- b. Fats: Muscles didn't kill Mr. Big.
- c. Lefty: Muscles was playing poker with Shorty when Mr. Big was terminated.
- d. Muscles: Lefty didn't kill Mr. Big.

Who killed Mr. Big? ***Justify your answer!***