$$e^{i\pi} = -1$$

Greek philosopher, Aristotle, was the pioneer of logical reasoning. Logical reasoning provides the theoretical base for many areas of mathematics and consequently computer science. It has many practical applications in computer science like design of computing machines, artificial intelligence, definition of data structures for programming languages etc.

Example

During a murder investigation, you have gathered the following clues:

1. if the knife is in the store room, then we saw it when we cleared the store room;

2. 2. the murder was committed at the basement or inside the apartment;

3. 3. if the murder was committed at the basement, then the knife is in the yellow dust bin;

4. 4. we did not see a knife when we cleared the store room;

5. 5. if the murder was committed outside the building, then we are unable to find the knife;

   6. if the murder was committed inside the apartment, then the knife is in the store room.

   The question is: "Where is the knife?"

Good luck!