



# The Strange Case of Mole Airline Flight 602-1023



You and your team of medical examiners are called to the scene of a plane crash at the Houston International Airport. A thorough investigation reveals evidence of a pre-crash explosion. The site of the explosion has a compound with the following analysis:

37.01 % carbon  
2.22 % hydrogen  
18.50 % nitrogen  
42.27 % oxygen

The victims are found in and around the crash and must be identified by the substances found in their belongings or in their bodies since dental records not available. Additionally, one passenger was murdered and the time of death has been established as one hour before the crash.

Your job, should you choose to accept it, is to:

1. Identify the compounds found on the victims or in the victim's blood by using the data below to determine the empirical formulas of the compounds.
2. Identify the victims by using personal data and the compounds found with them.
3. Determine who caused the plane to explode.
4. Determine who was murdered.
5. Determine the murderer.

Victim #	Analysis of Compound (%)	Where found
1	C = 67.31 H = 6.98 N = 4.62 O = 21.10	Blood & luggage
2	C = 63.15 H = 5.30 O = 31.55	Briefcase
	C = 46.66 H = 4.48 N = 31.10 O = 17.76	Stomach
3	C = 72.15 H = 7.08 N = 4.68 O = 16.03	Pockets
4	C = 15.87 H = 2.22 N = 18.15 O = 63.41	Blood & Pocket
5	C = 75.42 H = 6.63 N = 8.38 O = 9.57	Blood
	C = 37.01 H = 2.22 N = 18.50 O = 42.27	Luggage
6	C = 57.14 H = 6.16 N = 9.52 O = 27.18	Briefcase
7	C = 81.58 H = 8.90 N = 9.52	Luggage
8	C = 63.56 H = 6.00 N = 9.27 O = 21.17	Briefcase
	C = 75.42 H = 6.63 N = 8.38 O = 9.57	Pocket & Briefcase