Lab 12: Case Investigation

The Scene:

Your forensic team has been assembled to determine if a crime has been committed. Here are the key points about the scene:

- A female body was found in a chair with her wrists slit open from a sharp knife.
- The identity of the victim was quickly established. Her name is Janice Brown.
- A “suicide” note was found. A copy has been transferred to your group’s Evidence Folder.
- Near the note a pen, known to be the victim’s, was found. It has been transferred to your care. No other pen was found at the scene.
- A partially-filled glass of fruit punch was sitting on the table next to her. The fruit punch has been transferred to your care.
- Fingerprints have been recovered at the scene. Forensic technicians have lifted two latent (i.e. hidden) prints from the knife. Two prints have also been lifted from the fruit punch glass and one print has been lifted from inside the apartment door. These latent prints have been grouped on a Fingerprint Evidence Sheet and placed in your Evidence Folder.
- A lipstick stain was found on a napkin inside the garbage can in the kitchen. Two tubes of lipstick were found in the apartment of the victim, both of which have been transferred to your care.
- Money was found in a blue duffle bag in the closet of the victim’s apartment, all consisting of $10 bills. One of these bills was transferred to your care. The amount of money in the bag totaled $10,000.
- Blood has been obtained from the scene, both on the body of the victim, on the knife, and near the blue duffle bag in the closet. These blood samples have been transferred to your care.
- A urine sample was obtained from the victim and transferred to your care.
- The victim had several known acquaintances:
  - Donald Jones
  - Ann Smith
  - John Plain
  - Mary Jane
  - Gerry Doe
- Your group may also choose to:
  - “Subpoena” writing samples from known acquaintances of the victim for additional analysis.
  - Research the medical record files of known acquaintances and the victim for blood-type information.
  - You obtain this information from your instructor.
In a “real world” scenario, many other forensic tests would be done and available to you. But, these are the following tests that are available to your team (in no particular order):

**Fingerprint Analysis**  
This analysis involves comparing the fingerprints in question to known sets of fingerprints on file.

**Poison Test**  
Using an ultraviolet visible diode array (UV-VIS) spectrophotometer, a solution can be analyzed for common types of poisons.

**Toxicological Test**  
Using a special “poison strip”, the urine can be tested for the presence of poison in the system (this test is not reliable with blood).

**Ink Chromatography**  
This is a reliable method for detecting the unique compounds that make up ink in a pen (using thin layer chromatography).

**Lipstick Chromatography**  
This is a reliable method for detecting the unique compounds that make up lipstick (using thin layer chromatography).

**Handwriting Analysis**  
This method is used to determine whether or not a writing sample has been forged.

**Counterfeit Analysis**  
This method is used to determine if money is real or counterfeit.

**Blood Test**  
This method is used to determine the blood type of various samples.

With this information, determine a plan-of-action for conducting your investigation with these points in mind:

- The poison test, toxicological test, and handwriting analysis can only be conducted in week #1.
- The ink chromatography, lipstick chromatography, and blood test can only be conducted in week #2.
- The fingerprint analysis and counterfeit analysis can be done at any time, although it is recommended that you try to complete this in week #1.
- Remember, it is important to conduct ALL of these tests in order to gather as much forensic information as possible for your police investigators.
Report:

In your final report, be sure to include the following points:

- Did a wrongful death occur?
- Include all findings with scientific evidence.
  - Fingerprint Analysis
  - Poison Analysis
  - Chromatographic Analysis
  - Document Analysis
  - Counterfeit Analysis
  - Blood Analysis
- Who is/are the primary suspect(s)? Be sure to include all evidence to support your answer (either embedded in your scientific findings above or as a separate section).
- What are some other tests you recommend should be conducted in order to provide more forensic evidence for this investigation?