The Mystery of Anna Anderson

Background:
The Romanov family ruled Russia for 300 years. In 1918, the last ruling Romanov, Nicholas II, and his family were executed and buried in a mass grave in Siberia. When the grave was exhumed, two of the bodies were missing. In this activity, you will use forensic tools to solve the mystery of the missing Romanovs.

Go to www.dnai.org/d/index.html.
Click on "Applications."
Review Module Two: Recovering the Romanovs and the use of mitochondrial DNA.

Romanov family history:
Delve into the history of the Romanovs, the last imperial family of Tsarist Russia.

The mystery of Anna Anderson:
Meet Anna Anderson, who claimed to be the missing Anastasia Romanov, and compare her features with Anastasia's.

Science solves a mystery:
Find out how DNA science was used to determine whether Anna Anderson was the missing Anastasia Romanov. After reviewing the module, answer the following questions.

Questions:

1. How is it possible that a family with the same genotypes as the Romanovs have no children with hemophilia?

2. How can skeletons be identified?

3. How is mitochondrial DNA different in shape from nuclear DNA ?

4. From which parent is mitochondrial DNA inherited?

5. How was DNA science used to prove the identity of skeletal remains from the Yekaterinburg?

6. What did the comparison of mitochondrial DNA sequences show?

7. Do you think Anna Anderson is Anastasia? Support your answer with the evidence.