

Name _____ Date _____ List # ____ - ____

Marie Curie

Marie Curie was born on Nov.7, 1867, as the youngest of five children. In 1891, Curie moved to France and lodged with her sister while studying physics and math at Sorbonne University in Paris. She met her future husband Pierre Curie in 1894 and married him a year later;; both the Curies then began work trying to uncover the mysteries of physics' most mind--boggling particles. The Curies worked at the School of Chemistry and Physics in Paris and began researching the invisible rays given off by an element called uranium. Marie Curie collected samples of a mineral called pitchblende and discovered it gave off more rays than did uranium alone. She hypothesized that pitchblende was made of more than just uranium, and began trying to separate its different contents. Eventually, she and her husband were able to isolate a new element called polonium: one that was 330 times more radioactive than uranium.

Even after extracting polonium, Marie Curie still noticed a radioactive liquid that remained in the composition of pitchblende, and decided to study it further. She and her husband published a paper theorizing about the existence of this new element in 1898, calling the element radium: but they still needed to find some concrete proof. To do so, Curie purchased huge amounts of pitchblende with the uranium already

removed—a highly radioactive substance that had negative effects on her and her husband's health. After years of research and extraction, Marie and Pierre Curie proved radium's existence in 1902. Both of them won the Nobel Prize for physics in 1903 due to their hard work.

In 1906, Pierre Curie died in a horse and cart accident. Marie Curie continued with her work;; in World War I, she helped to create portable x--ray units that were used to diagnose injuries on the battlefield. By 1914, her machines—known as Petits Curies— were being transported to the front lines of battles along with Marie herself. The technology used in the Petits Curies is similar to what we use in modern--day fluoroscopy machines that examine moving images in the body, such as a beating heart.

Marie Curie died in 1934 due to a medical condition developed after years of radiation exposure at age 66—but not before leaving a significant impact on the science world. She was the first woman to win a Nobel Prize in physics, and the first person to receive two Nobel Prizes: one in physics, and another for chemistry in 1911. She made large strides in the fields of science as a smart, talented, and powerful woman.

Directions: In the blank, write the letter of the correct option. (7 pts.)

- ____ 1. **Which of the following elements did Marie and Pierre Curie not discover?**
- A. Uranium.
 - B. Radium.
 - C. Polonium .
 - D. They discovered all of the above.
- ____ 2. **Given the information in the article, which of the following is likely true?**
- A. Pierre Curie did not have much interest in physics or math.
 - B. Marie Curie proved radium's existence immediately after she discovered polonium.
 - C. Curie's education at Sorbonne University prepared her to apply physical science and discover polonium and radium.
 - D. Marie Curie created the Petits Curies so that she would not have to go onto the battlefields herself.
- ____ 3. **Marie Curie's x-ray units were known as Petits Curies. The French translation of "petits" is "small." Given this knowledge, infer why Curie's machines received this name.**
- A. To emphasize their insignificance.
 - B. To highlight their portability.
 - C. To dismiss their value.
 - D. To point out their microscopic size.
- ____ 4. **Infer why Marie Curie ordered samples of pitchblende with the uranium removed in order to prove radium's existence.**
- A. Uranium was already confirmed to be part of pitchblende, and she wanted to focus more on the unknown components.
 - B. Uranium was interfering with the radium, and had to be removed in order to isolate the new element.
 - C. Uranium was making the pitchblende too heavy and degrading the other elemental components.
 - D. She had already discovered uranium, and now wanted to focus on isolating radium.
- ____ 5. **Which of the following statements about Marie Curie is supported by the article?**
- A. She was never properly honored for her advances in physics and chemistry.

- B. She persisted towards scientific discovery despite potential dangers to her health.
- C. She was the oldest child in her family and thus had access to better opportunities.
- D. She couldn't bear to continue her scientific work after the death of her husband.

___6. **A scientist wants to learn more about the procedures Marie and Pierre Curie used to discover radium and polonium.**

Which resource would be best for her to consult?

- A. Marie Curie's diary detailing her relationship with Pierre.
- B. Marie Curie's lab notebook containing notes from her time at the School of Chemistry and Physics.
- C. A biography of Marie Curie's life.
- D. A letter Marie Curie wrote to her siblings while studying at the Sorbonne.

___7. **Put the following events from Marie Curie's life in order.**

- I. Curie's Petits Curies are transported to the front lines.
 - II. Curie wins a Nobel Prize for Chemistry.
 - III. Curie proves radium's existence.
 - IV. Curie studies at the Sorbonne.
- A. II, II, I, IV
 - B. IV, I, III, II
 - C. IV, III, II, I
 - D. I, II, III, IV