



Name: \_\_\_\_\_

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## Female Pioneers

Since the computer's invention, many of the people famous for working in computer science have been men. Even now, only about 25 percent of people working in computer-related fields in the United States are women. However, some of the first computer programmers were a group of American women who worked at the University of Pennsylvania in the 1940s. They made a huge contribution to the development of modern computers, but for many years their work was largely forgotten.

During World War II, many American men were fighting overseas. As a result, women were needed for jobs that were traditionally done by men. For example, in 1942, the U.S. Army hired a group of women who had studied math in university. The U.S. Army needed to understand where and how its rockets and bombs moved, so the army asked the women to do the calculations. At first, the women worked with desk calculators. Each calculation took one woman about 20 hours to complete.

To reduce the time it took to complete these calculations, the army developed a special computer in 1943. It was called ENIAC, and it was designed by engineers at the University of Pennsylvania. The computer was big enough to fill a whole room and had to be programmed before each calculation. Six women were chosen to develop a way to program the computer. Their names were Kathleen Antonelli, Jean Bartik, Betty Holberton, Marlyn Meltzer, Francis Spence and Ruth Teitelbaum. Although it could sometimes take a long time to program the computer for a calculation, once the computer was programmed, it only took 30 seconds to complete each calculation.

Although the women created one of the first computer programs, few people remembered them. Then, in 1986, a young female student at Harvard University, Kathryn Kleiman, was researching women in computer science. She came across a photo of the six women working with ENIAC. She began to research the women's contribution and eventually made a documentary about them. Finally, the women were recognized for the big role they had played in the development of modern computing. Kleiman believed that remembering these women is important because it will encourage more women to take up careers in computer science.



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1. What is true about computer programming?
  - a. Most people had forgotten that some of the first computer programmers were female.
  - b. A majority of people who study to become computer programmers are women.
  - c. Male computer programmers have trouble finding jobs in the modern economy.
  - d. Most of the men working in computer programming studied at the University of Pennsylvania.
  
2. What happened during World War II?
  - a. Women began doing jobs which had mostly been done by men before the men went to war.
  - b. Men who had studied math in college often found it difficult to find a place to work.
  - c. The U.S. Army calculated the time it took to build rockets and bombs.
  - d. The U.S. Army hired a group of women to fight along with men overseas.
  
3. ENIAC was
  - a. a special program where women could learn how to develop new computers.
  - b. a device that could quickly do calculations that took humans a long time to complete.
  - c. an event held by the U.S. Army to increase the security of their computers.
  - d. a type of device that was used by computers to increase the speed of their calculations.
  
4. What did Kathryn Kleiman do?
  - a. She created a group to support women who want to become computer programmers.
  - b. She made a documentary about a group of women who helped develop modern computer programming.
  - c. She became the first woman to get a degree in computer programming at Harvard University.
  - d. She developed a new way to use computer programming to create movies.