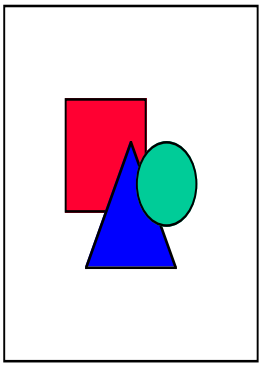

Julia Bowman Robinson
1919-1985

Julia Bowman was born in St. Louis Missouri on December 8, 1919 and she died on July 30, 1985. At the young age of two, Julia's mother passed away. Julia and her sister Constance were sent to Arizona with their nurse to live with their grandmother. Julia's father remarried a couple of years after her mother died. When Julia was nine years old, she became ill with scarlet fever and then immediately came down with rheumatic fever. Since she was sick for almost two years, her parents hired a retired teacher to tutor her through elementary school. It was during this time that Julia discovered her love for mathematics.

Julia was the only girl in her math and physics classes in high school. She was never encouraged by her teachers to work on the advanced problems in either class. Upon graduation from high school, Julia received awards in both mathematics and other sciences. Julia attended San Diego State University and later entered the University of California at Berkeley. It is here where she met and married Ralph M. Robinson. He encouraged Julia to continue with her mathematical career.

In 1961, Julia Robinson worked on a paper with Yuri Matijasevich on Hilbert's Tenth Problem. Julia spent a good portion of her time on the Tenth Problem. As one of the few female mathematicians, Julia was the first to be elected to the National Academy of Sciences. Later on, she became the first woman president of the American Mathematical Society. Although she broke down the doors for future women mathematicians, Julia wanted to be remembered for her math and not for her gender. Julia did not wish for her life to be on display for everyone to see, but wanted her math to be remembered by all.

A Diophantine equation is an equation in which only integer solutions are allowed. The general form for a diophantine equation is $x^n + y^n - z^n = 0$. Diophantine equations are the building blocks for Hilbert's Tenth Problem. The problem asks if one can find, in a finite number of steps, if a higher order diophantine equation can be solved. The answer to this is no. Even today with technology the world's fastest and most sophisticated computers still cannot come up with a positive answer to this problem.

Fill in the Blank

1. Julia Bowman Robinson attended _____ University and then later attended _____.

2. _____ worked with Julia on the solution to Hilbert's tenth problem.

3. The general form for a Diophantine equation is _____.

4. Julia and _____ were sent to live in _____ with their grandmother after the death of their mother.

5. Julia Robinson wanted to be remembered for her _____.

True or False

1. Julia Bowman was born in Jackson Mississippi.
2. Julia was the only girl in her math and physics classes in high school.
3. Julia was the second female to become president of the American Mathematical Society.
4. Julia was encouraged by Ralph Robinson to continue her mathematical career.
5. Because of her illnesses Julia's parents hired a tutor to help her through elementary school.

Diophantine Equations

1. Give an example of one with no solution.

2. Give an example of one with only one solution.

3. Solve this problem using the coefficient reduction method. $9x - 19y = 3$.