

SUMMER FUN

WOMEN OF THE 1960S

During the 1960s the roles of women in society greatly changed. The Equal Pay Act of 1963 and Civil Rights Act of 1964 prohibited discrimination against women in the workplace, and larger numbers of women began to fill jobs in science, politics, and law fields. TV and movies also began to break away from showing women as the stereotypical homemaker. Women's fashion became more casual after the introduction of capri pants and the mini skirt. Complete the activities below to learn about three women of the 1960s and the contributions they made.



Dr. Katherine Johnson

Katherine Johnson was a mathematician who helped get the first man into space and the first man to the Moon. Johnson had a love for math from a very young age and graduated with a degree in Mathematics and French from West Virginia State University at the age of 18. Johnson was a teacher for many years before beginning work for NACA, National Advisory Committee for Aeronautics, which would later become NASA. Her first job at NACA was as a computer, which at the time meant “a person who computes”. Human computers were tasked with solving large math equations by hand. Johnson went on to work as an aerospace technologist for NASA in the late 1950s.



In 1962, NASA used advanced computer programming to calculate the trajectory, or flight path, for the Friendship 7 spacecraft. However, Friendship 7 astronaut John Glenn wanted the calculations confirmed, and asked Johnson to calculate the trajectories by hand. Once she was able to confirm that her calculations matched the computer, Glenn was confident in continuing the mission and became the first American to orbit the Earth. This was one step in helping launch the United States ahead of the Soviet Union during the Space Race.

Using Geometry

Geometry is a form of mathematics that studies shape and space and is commonly used to calculate angles. Johnson used geometry to help calculate the trajectory of Friendship 7 and Apollo 11. In order to calculate trajectory, you need to know an object’s velocity (V), angle of launch (α), and initial height (h). You use the three numbers to solve the trajectory (y) equation below:

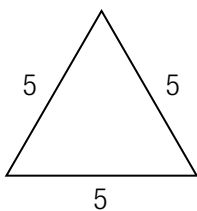
$$y = h + x * \tan(\alpha) - g * x^2 / 2 * V_0^2 * \cos^2(\alpha)$$

Can you imagine solving this equation by hand?

Think about a rocket’s trajectory as a triangle. You can calculate an angle of a triangle by following the steps below.

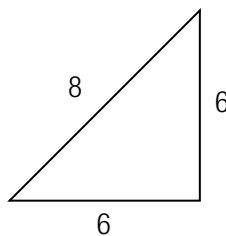
Things you will need to know:

- The three angles inside of a triangle are called **interior angles**. Each interior angle is located inside a shape where two lines meet.
- The sum of three interior angles of a triangle will always equal **180°**.
- There are three different types of triangles:



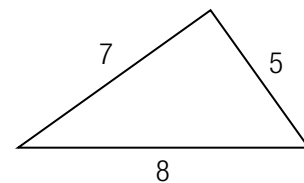
Equilateral

All three sides are equal in length



Isosceles

Only two sides are equal in length



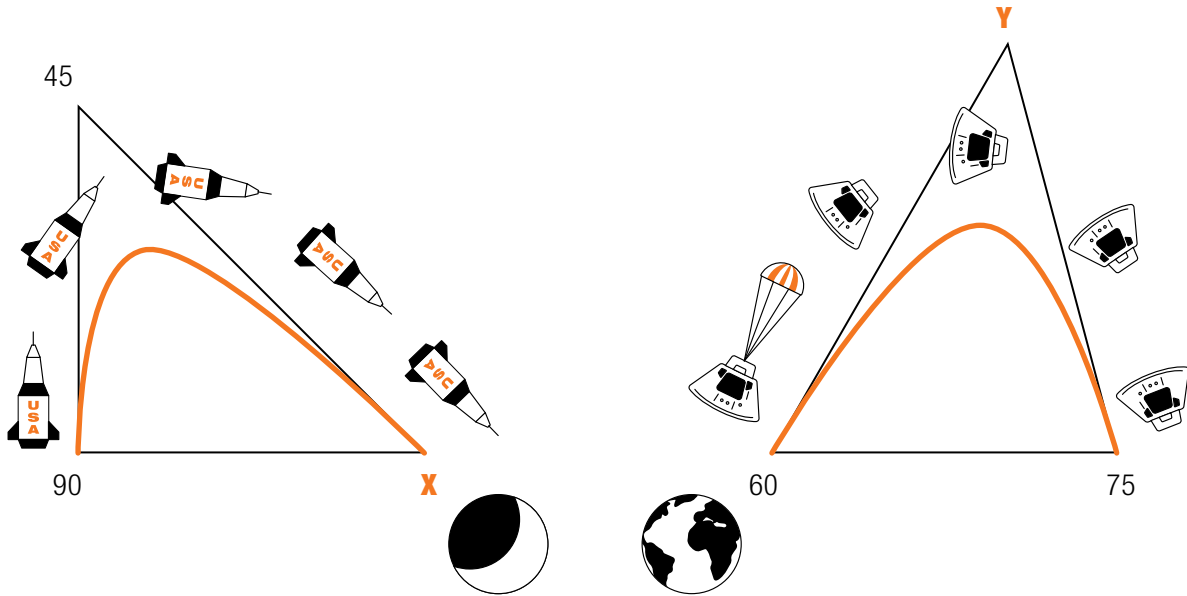
Scalene

All three sides are different in length

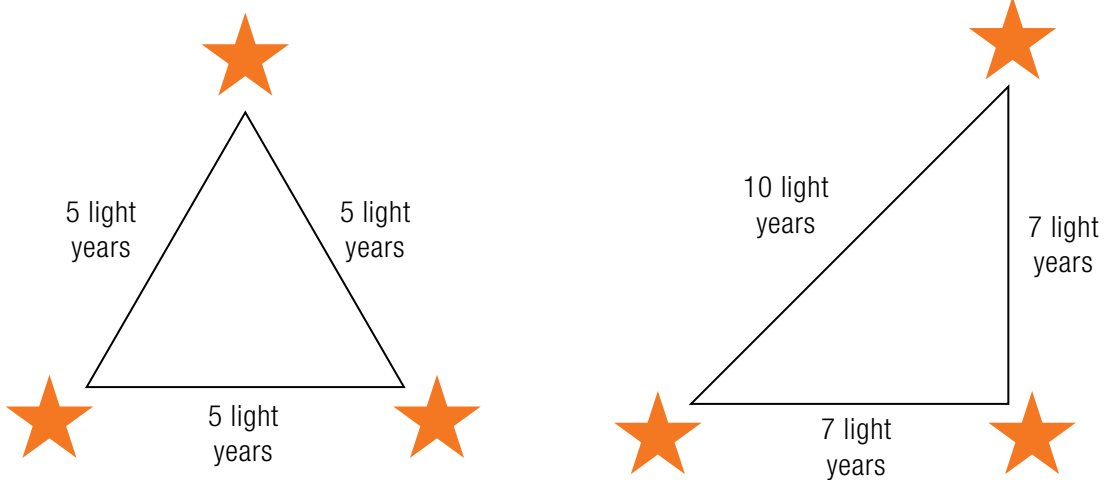
Photo courtesy of NASA

Now it's your turn!

Calculate the missing angle (X) below to help the rocket reach the moon. Then help the capsule get home by calculating the missing angle (Y). Remember that when you add up the three angles, they will equal 180.



Look at the different distances between stars. Which of the three types of triangles is represented?



Jacqueline Kennedy

Jacqueline Lee Bouvier was born on July 28, 1929, in Southampton, New York. Growing up, Bouvier enjoyed horseback riding, reading, ballet and could speak French, Spanish, and Italian. She went on to study French Literature at George Washington University and earned her degree in 1951. She worked as a junior editor for Vogue and took photographs of people and asking them questions for a newspaper column at the Washington Times-Herald. She was introduced to U.S. House Representative John F. Kennedy in 1952, and they married a year later on September 12, 1953. Mrs. Kennedy supported Rep. Kennedy in his campaign for U.S. Senator in 1953 as well as his run for president in 1960, both of which Kennedy won.

During her time as First Lady, Mrs. Kennedy was known for her love of the arts. Her first project was major restoration of the White House. Her main goal for the project was to restore the White House to be a representation of the history of the presidency. She hired an interior designer and created The Fine Arts committee to help accomplish her goal. During the restoration Mrs. Kennedy was able to find items like rugs, flatware, and the Resolute Desk, all items hidden throughout the White House that were used by previous presidents. To fund the restoration, guidebooks detailing the restoration were sold. On February 14, 1962, Mrs. Kennedy led a televised White House tour that was broadcast by CBS and watched by millions.



Your Home Tour

Imagine you were asked to give a tour of your house. What would you like your tour to say about the house and the people who live there? Many of the items that Mrs. Kennedy focused on were antique furniture and art to show the history of the presidency. What theme would you follow for your home tour?

Pick 5 items that go along with a theme and think about how you would present these objects on a tour.

Answer the questions about each object to craft a script for you tour:

1. What is the object?
2. What is the story behind this object?
3. How long have you had the object?
4. Where is the object kept and why?
5. What does this object mean to you? Why did you include it on your tour?

Joan Baez

Joan Baez was born on Staten Island, New York, on January 9, 1941. As a young girl she loved music and learned to play rhythm and blues on the ukulele. She continued to practice music and eventually learned to play guitar. After graduating high school, her family relocated to Boston, where she played concerts and performed at clubs. She released her first album in 1960 with many songs focusing on social justice. Baez has actively supported several political causes including human rights, civil rights, and free speech throughout her lifetime, using her music and taking action. Baez has continued to release music and in 2017 was inducted into the Rock and Roll Hall of Fame.

Baez's music was influenced by civil rights and social justice issues. She was deeply inspired when she heard Dr. Martin Luther King Jr. speak in 1956 and became very involved in civil rights demonstrations. Baez participated in a concert at the end of the March on Washington in 1963 with musicians including Mahalia Jackson, Marian Anderson, and Bob Dylan. At the concert she gave an iconic performance of *We Shall Overcome*, an anthem of the Civil Rights Movement. Baez also participated in the Selma to Montgomery marches for voting rights.



Writing Your Own Song

Listen to the recording below of Joan Baez performing *We Shall Overcome*. What do you think the song means? Why do you think this song was so important to the Civil Rights Movement? How does it apply to our lives today?

“We Shall Overcome” (1963) youtu.be/nM39QUiAsoM

After listening to *We Shall Overcome*, use it as inspiration to write lyrics for a song about an issue that you feel strongly about. Write 4-5 lines that would be included in your song. Think of a title for your song as well.

Title of song _____

Line 1 _____

Line 2 _____

Line 3 _____

Line 4 _____

Line 5 _____