

Name _____

Date _____

Galileo Galilei

Galileo was born in February 1564 and died in January 1642. He was born in Pisa, Italy, and came from a poor noble family. He is regarded as a great scientist, physicist, mathematician, and astronomer. He is known as the Father of Modern Science and is said to have been a pioneer in the experimental scientific method.

In 1581, Galileo went to the Pisa University to study medicine. It is said that after overhearing a geometry lesson, he decided he wanted to study geometry and mathematics instead of medicine.

In 1589, Galileo became a mathematics lecturer at the Pisa University. It was during that time that Galileo carried out his experiments on falling objects. It was believed that heavier objects fell more quickly than lighter ones. A popular story is often told, though it may not have actually happened, about Galileo throwing round balls with different weights from the Leaning Tower of Pisa to examine whether heavier objects fall faster than lighter ones. He discovered that objects fall at the same speed regardless of how much they weigh.

In 1592, he moved to the University of Padua and became a mathematics professor there until 1610. In 1609, Galileo heard descriptions of the new invention of the telescope. Based on these accounts, he built himself one. His first one had a magnification of 3. Shortly after, he built one that could magnify things up to 32 times.

With the help of his telescope, Galileo was able to make many discoveries in astronomy. Some of the main discoveries were:

- 1) Confirmation of the phases of Venus, which are similar to the lunar phases.
- 2) Observation that there were four moons revolving around Jupiter. These four moons are sometimes referred to as Jupiter's satellites or the Galilean moons.
- 3) Observation of sunspots.

At the time, people believed that the Earth was the center of the universe and that all other heavenly bodies and planets revolved around the Earth. This view is known as the geocentric view and is attributed to the Greek astronomer called Ptolemy.

Galileo's observations with the telescopes convinced him that Copernicus' heliocentric theory was correct. The heliocentric view is the belief that the sun is the centre of the universe and that the planets including Earth all revolve around the sun.

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Galileo Galilei (Cont'd)

In 1613, Galileo published a book called "*Letters on the Solar Spots*" and wrote in it that he supported Copernicus' view. His support of the heliocentric view got him into trouble and conflict with the Roman Catholic Church that still upheld the geocentric view. In 1616, Galileo was made to promise that he would not teach or support the heliocentric view. However, in 1632, Galileo published a book called "*Dialogue on the Two Principal Systems of the World.*" In this book, he supported Copernicus' views and defended the heliocentric view.

Galileo was called to Rome by the Inquisition and was ordered to publicly deny his beliefs under threat of torture. In 1633, he was sentenced to life imprisonment, but because of his age was permitted to live under house arrest.

At the age of 72, Galileo became blind. He published his last work in 1636 called "*Discourses and Mathematical Demonstrations Relating to Two New Sciences,*" in which the two new sciences refer to the strengths of materials and motion of objects.

Galileo Galilei Answers

Multiple Choice:

1. Galileo was all except:
 - a. An astronomer
 - b. A physicist
 - c. A doctor
 - d. A mathematician

2. Galileo discovered regarding falling objects that:
 - a. Heavier objects fall faster than lighter ones
 - b. Light objects fall at the same speed as heavy ones
 - c. Lighter objects fall faster than heavier objects
 - d. It could not be determined whether heavy or light objects will fall faster

3. Galileo was placed under house arrest because:
 - a. He stole the idea of the telescope
 - b. He did not pay his taxes
 - c. He defended the view that the sun was the centre of the universe
 - d. All of the above

List three major discoveries of Galileo:

6. _____
7. _____
8. _____

True or False:

- ____ 9. The Roman Catholic Church defended that the sun was the center of the universe and that all planets revolved around it.
- ____ 10. Galileo defended the views of Ptolemy.
- ____ 11. The Galilean moons refer to the four moons or satellites discovered by Galileo through his telescope.

Galileo Galilei Answers

Multiple Choice:

1. Galileo was all except:
 - a. An astronomer
 - b. A physicist
 - c. **A doctor**
 - d. A mathematician

2. Galileo discovered regarding falling objects that:
 - a. Heavier objects fall faster than lighter ones
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 - a. He stole the idea of the telescope
 - b. He did not pay his taxes
 - c. **He defended the view that the sun was the centre of the universe**
 - d. All of the above

List three major discoveries that Galileo made through his telescope:

5. Confirmation of the phases of Venus (similar to lunar phases)
6. Observation that there are four moons revolving around Jupiter
7. Observation of sun spots

True or False:

- F 8. The Roman Catholic Church defended that the sun was the center of the universe and that all planets revolved around it.
- F 9. Galileo defended the views of Ptolemy.
- T 10. The Galilean moons refer to the four moons or satellites discovered by Galileo through his telescope.