



ISTITUTO E MUSEO
DI STORIA DELLA SCIENZA

Galileo's telescope Test

This is the Test material for verifying the contents
of the *History* and *Simulation* sections of the web application.
Texts prepared by the *Institute and Museum of the History of Science* in Florence.

History Section

1. The first documentary source reporting with certainty the invention of the telescope is:

- a. A letter from Galileo to Benedetto Castelli dated May 1609
- b. A deed issued by the Dutch Estates General on October 2, 1608
- c. The *Sidereus Nuncius* [Starry Messenger] by Galileo Galilei
- d. The *Dioptrice* by Johann Kepler

2. The Dutch Estates General granted a patent for the exclusive production of telescopes to the optician Hans Lipperhey, who soon became one of the most illustrious and wealthiest citizens of Middelburg.

- a. True
- b. False

3. In the *De Vero Telescopii Inventore*, published in The Hague in 1655, Pierre Borel attributes the invention of the telescope to:

- a. Giovanni Battista Della Porta
- b. Galileo Galilei
- c. Sacharias Janssen
- d. Hans Lipperhey

4. In April 1609 little telescopes with magnification of 3-4, fabricated with lenses made for eyeglasses, were sold in opticians' shops in Paris and perhaps also in London.

- a. True
- b. False

5. Galileo built his first telescope:

- a. In the autumn of 1608
- b. In the summer of 1609
- c. In January of 1610

6. After his first telescope with a magnification of 3, by August 1609 Galileo had already made one with a magnification of 8.

- a. True
- b. False

7. In August 1609 Galileo gave a demonstration of the performance of his 8-power telescope:

- a. In Florence at the Court of the Grand Duke of Tuscany Cosimo II
- b. In Venice on the bell tower of St. Mark's in the presence of the Doge and other Venetian notables
- c. In Padua before his professorial colleagues

8. The sensation aroused by his telescope won Galileo:

- a. A prize of 5000 Florins awarded him by the Venetian Republic, or "Repubblica della Serenissima"
 - b. His return to Tuscany, where he was assigned the Chair of Mathematics at the University of Pisa
 - c. A lifetime appointment to the Chair at Padua with a salary of 1000 Florins a year
 - d. The position of first astronomer at the Observatory of the Collegio Romano
9. The Keplerian telescope differs from the Galilean in having:
- a. A diverging, rather than converging, objective
 - b. A diverging, rather than converging, objective and a converging rather than diverging eyepiece
 - c. It has an extra lens in proximity to the objective
 - d. A converging rather than diverging eyepiece
 - e. It is fitted with an erector device
10. When spyglasses became telescopes, the tubes were generally made of cardboard.
- a. True
 - b. False
11. The very first telescopes had tubes made of:
- a. Metal
 - b. Wood
 - c. They had no tube and the lenses were held in position manually
12. In the seventeenth-century telescopes of English make, the eyepiece was usually placed in the tube of largest diameter.
- a. True
 - b. False

Simulation Section

1. The 'celatone' was:
 - a. A device for calculating the height of the mountains on the moon
 - b. A helmet with a telescope applied to it for determining the positions of the satellites of Jupiter in the open sea
 - c. An especially powerful telescope built by Galileo to investigate the “celata”, i.e., hidden, nature of Saturn

2. Galileo's discovery of the phases of Venus:
 - a. Constituted certain proof of the Copernican system
 - b. Falsified the Ptolemaic system
 - c. Was compatible with both the Ptolemaic and the Copernican systems

3. By what method did Galileo observe sunspots?
 - a. By the naked eye, protecting his eyes with a smoked glass
 - b. Directly with a telescope having no filter, which explains the blindness from which he suffered in his old age
 - c. By the projective method devised by Benedetto Castelli

4. Galileo believed that sunspots were:
 - a. An optical illusion caused by overheating of the objective lens
 - b. A phenomenon that takes place in the terrestrial atmosphere, caused by turbulence in the air
 - c. A phenomenon of combustion that takes place on the surface of the Sun or in its immediate vicinity

5. For the Jesuit father Scheiner, sunspots were caused by clusters of little planets that, interposed between the Earth and the Sun, appeared as dark spots against the background.
 - a. True
 - b. False

6. The hypothesis formulated by Galileo in regard to sunspots:
 - a. Demonstrated the immobility of the Sun, and consequently, the motion of the Earth
 - b. Corroborated the Aristotelian tradition of perfect, immutable celestial bodies
 - c. Suggested that the Sun rotated on its own axis in a period of about one month

7. In his first observations of Saturn, Galileo interpreted its shape as:
 - a. An oblong, olive-shaped body
 - b. Two separate bodies of about the same size
 - c. Punctiform like a star, but surrounded by dense nebulosity

- d. Three different bodies, aligned, the central one of which is three times larger than the other two
8. The luminous points observed by Galileo in the shadowed part of the Moon, in proximity to the terminator, were interpreted by him as:
- a. Clouds belonging to a presumed lunar atmosphere which, due to their height above the Moon's surface, were lit by the Sun
 - b. The peaks of lunar mountains struck by the light of the Sun
 - c. Volcanoes on the Moon giving off light
9. Galileo's interpretation of his observations, namely, that the Moon was strewn with high mountains and cut by deep valleys, conflicted with:
- a. Aristotelian cosmology
 - b. The Holy Scriptures
 - c. Lutheran beliefs
10. Galileo discovered that the number of stars that could be seen through the telescope was vastly greater than that of those visible to the naked eye.
- a. True
 - b. False
11. The Englishman Thomas Harriot had conducted observations of the Moon since November 1608.
- a. True
 - b. False
12. Galileo devised a method for determining, through telescopic observations of the Moon, the height of the terrestrial mountains.
- a. True
 - b. False

Correct answers - History section:

1. b
2. false
3. c
4. true
5. b
6. true
7. b
8. c
9. d
10. true
11. a
12. true

Correct answers - Simulation section:

1. b
2. b
3. c
4. c
5. true
6. c
7. d
8. b
9. a
10. true
11. false
12. false