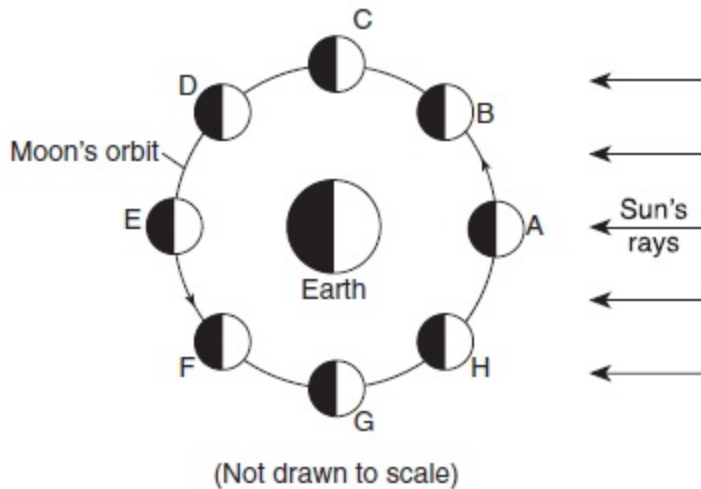


Base your answers to questions 1 and 2 on the diagram below and on your knowledge of Earth science. The diagram represents the Moon in eight positions, *A* through *H*, in its orbit around Earth.



1. Which Moon phase is observed in New York State when the Moon is located at position *F*?

- | | | | |
|----|--|----|--|
| 1) | | 2) | |
| 3) | | 4) | |

2. How many days are required for the Moon to complete a cycle of phases from the new Moon position represented in the diagram to the new Moon the following month?

- 1) 2.2 d 2) 27.3 d 3) 29.5 d 4) 365.26 d

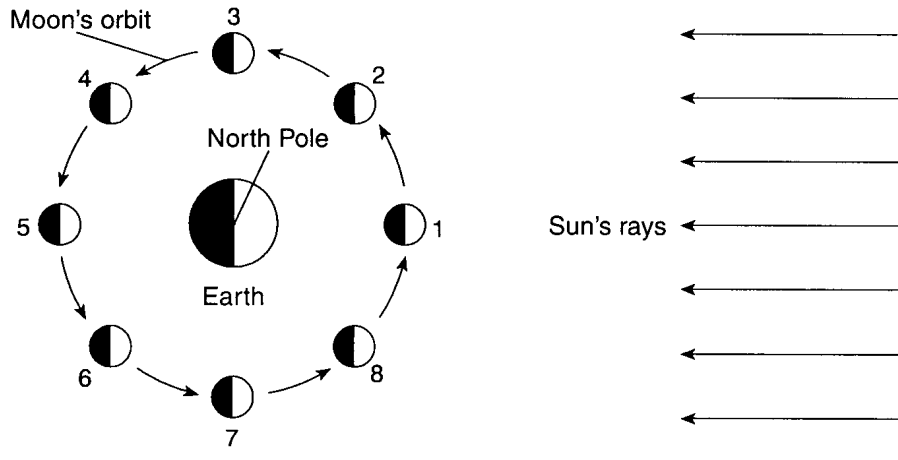
3. If the distance between the Moon and Earth were double its present distance, the Moon's cycle of phases would occur

- 1) in reverse order and more slowly
 2) in reverse order and more quickly
 3) in the same order but more slowly
 4) in the same order but more quickly

4. The same side of the Moon always faces Earth because the

- 1) Moon's period of rotation is longer than its period of revolution around Earth
 2) Moon's period of rotation is shorter than its period of revolution around Earth
 3) Moon rotates once as it completes one revolution around Earth
 4) Moon does not rotate as it completes one revolution around Earth

Base your answers to questions 5 and 6 on the diagram below, which represents the Moon orbiting Earth as viewed from space above the North Pole. The Moon is shown at eight different positions in its orbit.



(Not drawn to scale)

Key	
	Lighted, visible part of the Moon
	Dark, invisible part of the Moon

5. When the Moon is in position 2, which phase would be visible to an observer in Maine?

- 1)
- 2)
- 3)
- 4)

6. As the Moon changes location from position 2 to position 6, the visible portion of the Moon as observed from Earth

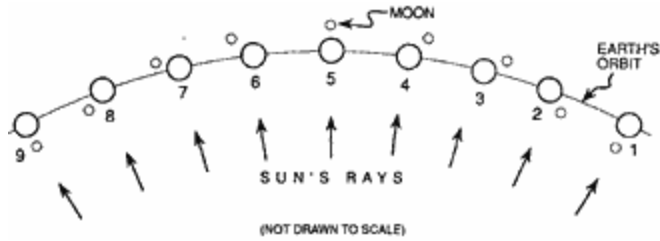
- 1) decreases, only
- 2) increases, only
- 3) decreases, then increases
- 4) increases, then decreases

7. Which sequence of Moon phases could be observed from Earth during a 2-week period?

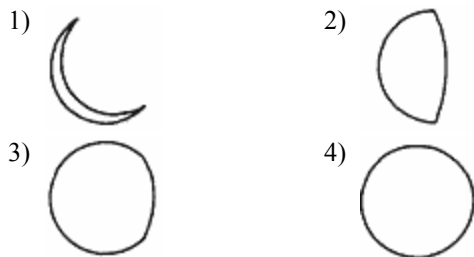
Key	
	Full Moon phase
	New Moon phase

- 1)
- 2)
- 3)
- 4)

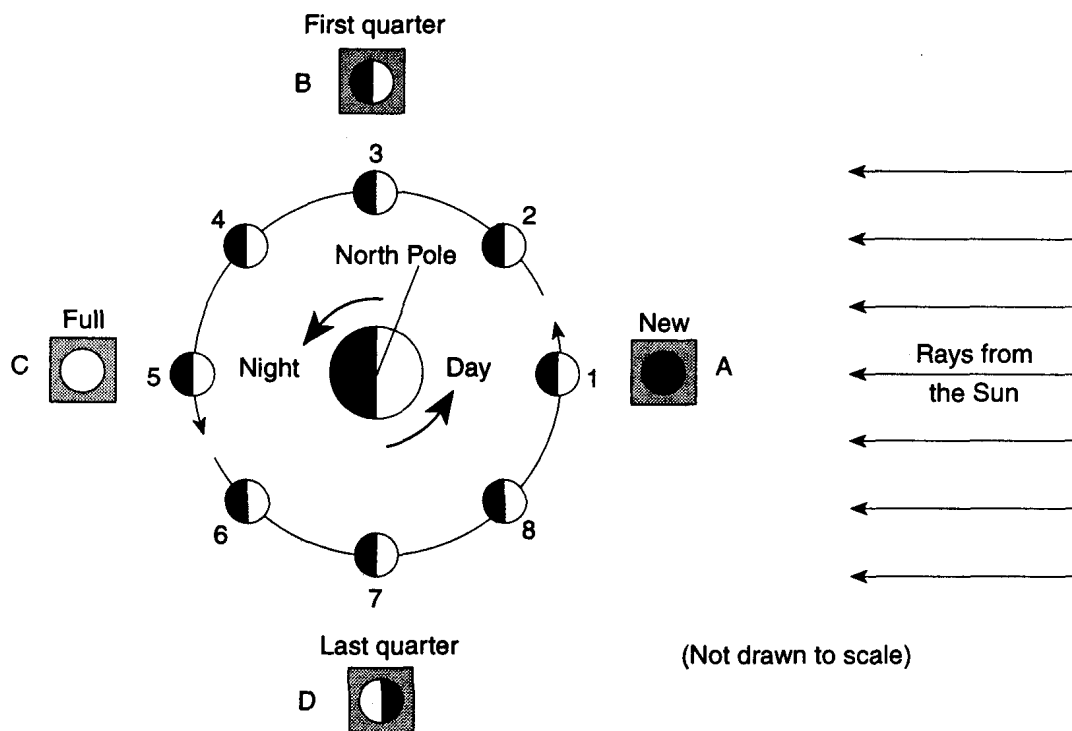
Base your answers to questions 8 through 10 on the diagram below which represents nine positions of the Earth in orbit around the Sun during one complete orbit of the Moon around the Earth.



8. The Earth rotates on its axis, causing the Moon to appear to rise each day. Moonrise occurs about 52 minutes later each day because as the Earth completes one rotation, the Moon also
- 1) completes one rotation on its axis
 - 2) wobbles on its axis
 - 3) is inclined $23\frac{1}{2}^\circ$
 - 4) revolves part way around the Earth
9. During the time that the Earth travels from position 1 to position 9, an observer on the Earth will see the lighted portion of the Moon
- 1) decrease, only
 - 2) increase, only
 - 3) decrease, then increase
 - 4) increase, then decrease
10. Which phase of the Moon will be seen from the Earth at position 5?



Base your answers to questions 11 through 13 on the diagram below, which represents a model of the Earth-Moon system as viewed from above the North Pole. The numbers 1 through 8 represent positions of the Moon as it revolves around Earth. The parts of the diagram lettered A through D show how the Moon's phases appear to an observer in New Jersey.



11. Which Moon phase appears highest in the sky at midnight to an observer on Earth?

- 1) full moon 2) new moon 3) first quarter 4) last quarter

12. Which motion causes the Moon to show phases when viewed from Earth?

- 1) rotation of Earth 2) revolution of Earth
3) rotation of the Moon 4) revolution of the Moon

13. As the Moon's phase changes from first quarter to last quarter, the visible portion of the Moon as observed from Earth will

- 1) decrease, only 2) increase, only
3) decrease, then increase 4) increase, then decrease