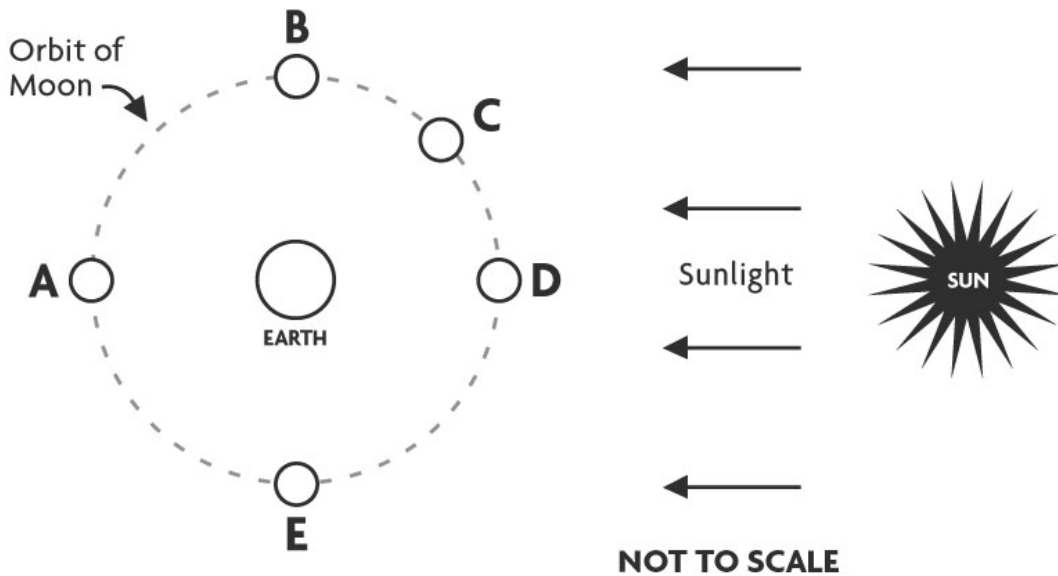


Astronomy Ranking Task: Phases of the Moon

Exercise #1

Description: The figure below shows a “top view” of the Sun, Earth, and five different positions (A - E) of the Moon during one orbit of Earth. Note that the distances shown for the Sun to Earth and for Earth to the Moon are not drawn to scale.



Ranking Instructions: Rank (from greatest to least) the amount of the Moon’s entire surface that is illuminated by sunlight for the five positions (A-E) shown.

Ranking Order: Greatest 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ Least

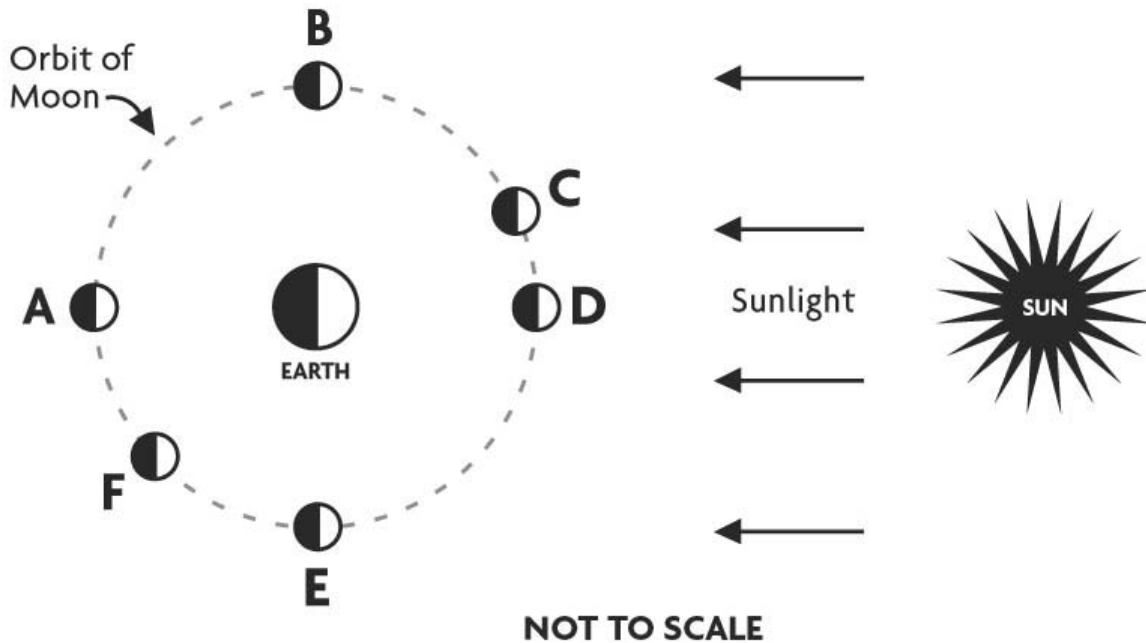
Or, the amount of the entire surface of the Moon illuminated by sunlight is the same at all the positions. ____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

Astronomy Ranking Task: Phases of the Moon

Exercise #2

Description: The figure below shows a “top view” of the Sun, Earth and six different positions (A - F) of the Moon during one orbit of Earth. Note that the distances shown for the Sun to Earth and for Earth to the Moon are not drawn to scale.



Ranking Instructions: Rank (from greatest to least) the amount of the Moon’s illuminated surface that is visible from Earth at each of the six positions (A – F) shown.

Ranking Order: Greatest 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ Least

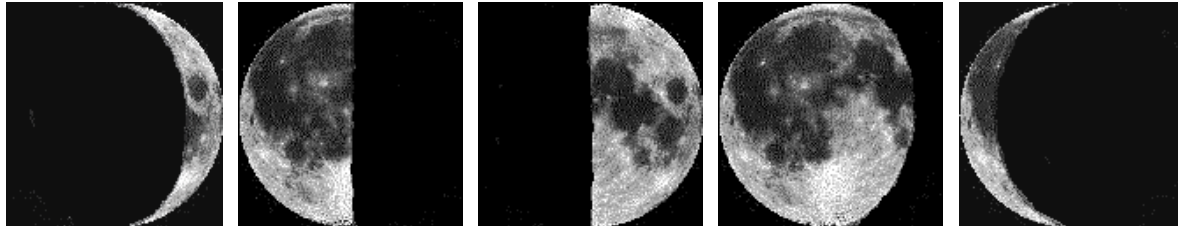
Or, the amount of the Moon’s illuminated surface visible from Earth is the same in all positions. ___ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

Astronomy Ranking Task: Phases of the Moon

Exercise #3

Description: Shown below are five different phases of the Moon (A – E) as seen by an observer in the Northern Hemisphere.



A

B

C

D

E

Ranking Instructions: Beginning with the waxing gibbous phase of the Moon, rank the moon phases shown below in the order that the observer would see them over the next four weeks.

Ranking Order:

Beginning with the waxing gibbous phase 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ Last phase seen.

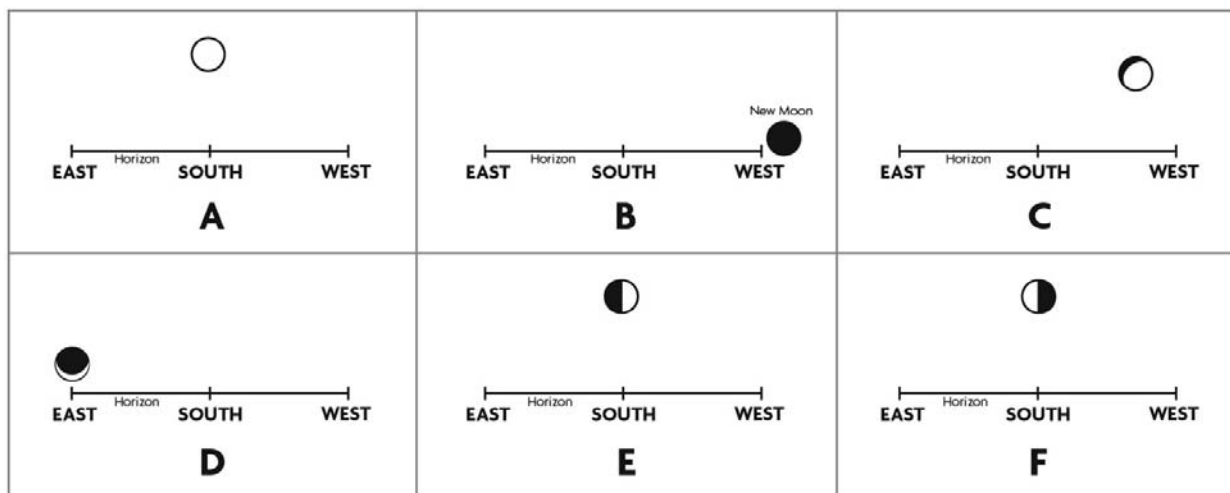
Or, all of these phases would be visible at the same time. ____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

Astronomy Ranking Task: Phases of the Moon

Exercise #4

Description: In each figure below the Moon is shown in a particular phase along with the position in the sky that the Moon would have at one time during the day (or night). The dark area on each moon figure shows the unlit portion of the Moon visible from Earth at that time. Assume that sunset occurs at 6 pm and that sunrise occurs at 6 am, and the observer is located in the Northern Hemisphere.



Ranking Instructions: Use the time each Moon phase (A – F) would appear as shown to rank the figures (from earliest to latest), starting from sunrise (6 am).

Ranking Order:

Earliest (about 6 am) 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____ Latest

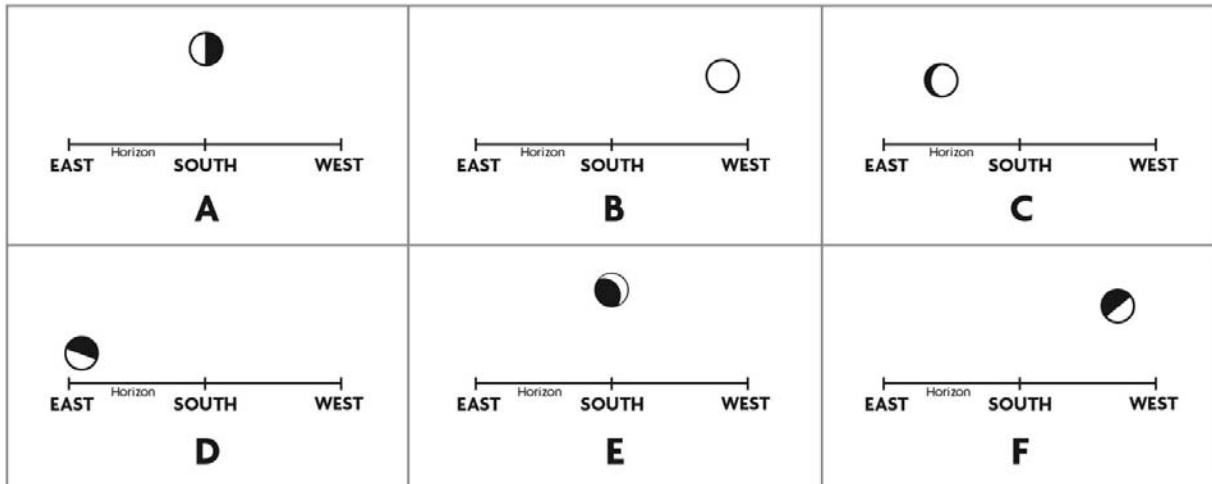
Or, the time of day or night are the same for all the phases shown. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

Astronomy Ranking Task: Phases of the Moon

Exercise #5

Description: In each figure below (A – F) the Moon is shown in a particular phase along with the position in the sky that the Moon would have at one time during the day (or night). The dark areas on each moon figure show the unlit portions of the Moon visible from Earth at that time. Assume that sunset occurs at 6 pm and that sunrise occurs at 6 am.



Ranking Instructions: Use the time each Moon phase (A – F) would appear as shown to rank the figures (from earliest to latest), starting from sunrise (6 am).

Ranking Order:

Earliest (about 6 am) 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____ Latest

Or, the time of day or night are the same for all the phases shown. ____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:
