

Name Key
 Date _____
 Period _____

Phases of the Moon Homework

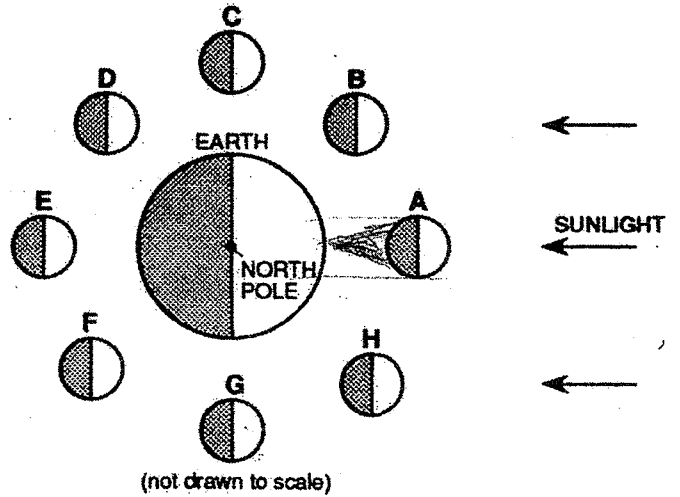
Before working on this assignment read textbook pages 762 - 767

Part A -

Name the phases of the moon that you would see from Earth based on the diagram below.

- A) New Moon
- B) Waxing Crescent
- C) 1st Quarter
- D) Waxing Gibbous
- E) Full Moon
- F) Waning Gibbous
- G) 3rd Quarter
- H) Waning Crescent

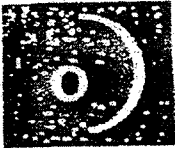






The diagram below represents eight positions of the Moon as it revolves around the Earth.



9) How long does a complete cycle of the moon's phases take? _____

Part B -

Name the following phases and determine whether they are waxing or waning.

- | | | | |
|---|---|---|---|
| 10)  | 11)  | 12)  | 13)  |
| phase <u>Waxing Crescent</u> | phase <u>Waning gibbous</u> | phase <u>1st Quarter</u> | phase <u>Waning Crescent</u> |
| <u>waxing</u> or waning | waxing or <u>waning</u> | <u>waxing</u> or waning | waxing or <u>waning</u> |
| 14)  | 15)  | 16)  | |
| phase <u>3rd Quarter</u> | phase <u>Waxing gibbous</u> | phase <u>Waning Crescent</u> | |
| waxing or <u>waning</u> | <u>waxing</u> or waning | waxing or <u>waning</u> | |

Answer the following questions based on the diagrams in questions 10 - 16.

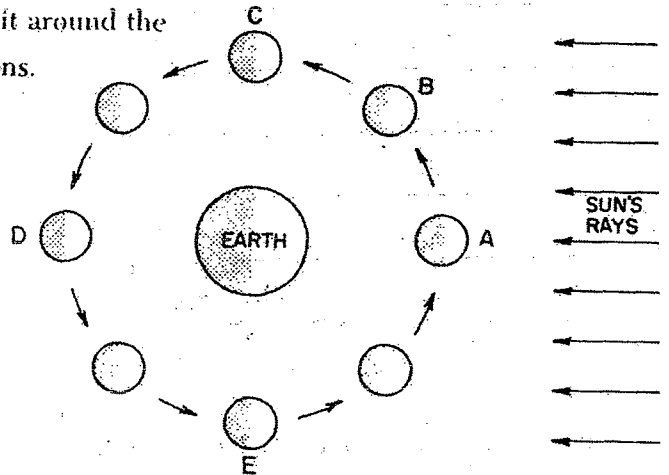
17) What phase would occur between diagram 16 (E) and diagram 10 (O)? New Moon

18) What phase would occur between diagram 15 (A) and diagram 11 (M)? Full Moon

19) If the moon looked like diagram 14(R), which number diagram would be observed next in the lunar cycle? #13 (O)

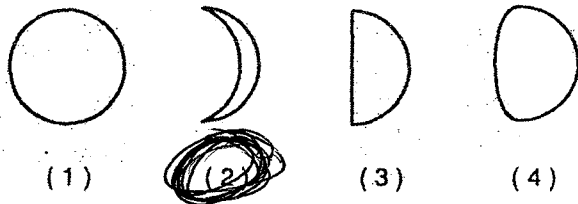
20) If the moon looked like diagram 10(O), which number diagram would be observed next in the lunar cycle? #12 (H)

The diagram represents the Moon in various positions in its orbit around the Earth. Letters A through E represent five of the Moon's positions.

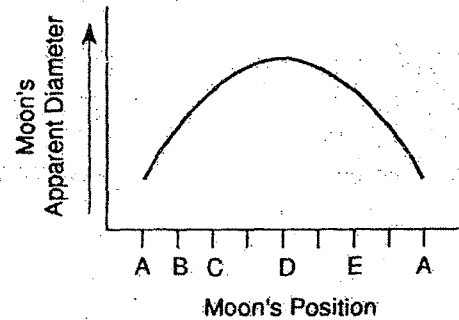


Questions 21 - 25

21) Which diagram best represents the appearance of the Moon to an observer on the Earth when the Moon is at position B?



24) The graph below shows the apparent diameter of the Moon as viewed from Earth during one revolution of the Moon.



According to the graph, at which position is the Moon closest to the Earth?

- (1) A
- (2) E
- (3) C
- (4) D

Note that question 25 has only three choices.

25) If the distance of the Moon from the Earth were to increase, the length of time the Moon would take to complete one revolution around the Earth would

- 1 decrease
- 2 increase
- 3 remain the same

22) The Moon would *not* be visible from Earth when the Moon is at position

- (1) A (New)
- (2) E
- (3) C
- (4) D

23) Why would an observer on Earth see a complete cycle of phases of the Moon in approximately 1 month?

- 1 The Moon rotates on its axis.
- 2 The Moon revolves around the Earth.
- 3 The Earth rotates on its axis.
- 4 The Earth revolves around the Sun.

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Eclipses and Tides Homework

- Multiple Choice -
- 1) During one 24 hour period, every point on Earth will experience B
 a. one high tide b. four tides c. four low tides d. one low tide
 ↳ 2HT + 2LT every 24hrs + 52min
 - 2) You can see a lunar eclipse if you look into the sky during _____
 a. a new moon b. crescent moon c. the day d. the night
 - 3) The area in a shadow in which all light is cut off is called the _____
 a. penumbra b. umbra c. postumbra d. true shadow
 - 4) When the moon is in Earth's shadow, a _____ occurs.
 a. solar eclipse b. new moon c. full moon d. lunar eclipse

Diagrams -

- A. Use Figure 5-2 to answer Questions 1-4
- 1) What kind of eclipse is shown in Figure 5-2? Solar Eclipse
 - 2) During what moon phase can this type of eclipse occur? New Moon
 - 3) Label the umbra and penumbra on the Figure.

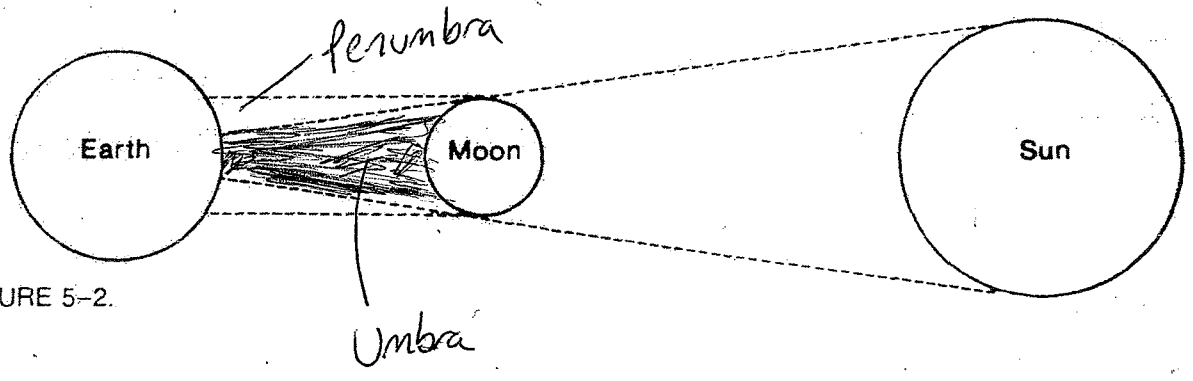
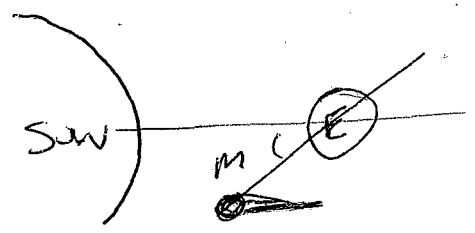


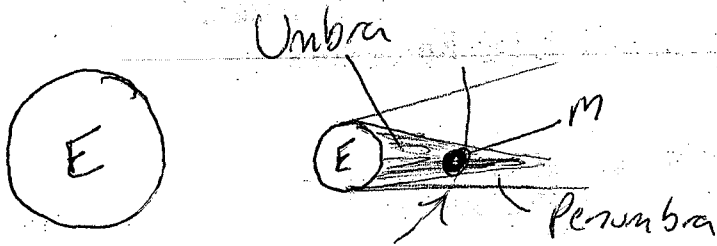
FIGURE 5-2.

4) Why don't we have a solar eclipse during every new moon phase?

- The Earth, moon, and sun are not lined up. (The moon's orbit is tilted by 5°)



B. Draw a diagram of the Earth, moon, and sun for a lunar eclipse. Label the umbra and the penumbra



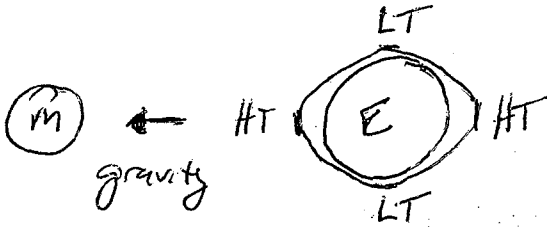
Answer the following questions based on your diagram

- 1) What is the phase of the moon during a lunar eclipse?
- 2) Why does a lunar eclipse last much longer than a solar eclipse?

Full Moon

Earth's Shadow (Umbra) is much larger than the Moon's Shadow.

C. Draw a diagram of the Earth and moon which shows how the tides occur.



- 1) How many high tides occur every 24 hours? 2 HT + 2 LT every 24hrs + 52min
- 2) How many hours are there between high tide and low tide? 6hrs + 13min
- 3) If the Earth, moon and sun all lined up (see figure 5-2), how do you think that would affect the tides?

When the Earth, Sun, and moon are lined up (Full + New Phases) the High Tides will be higher and the Low Tides will be lower. (Greater Tidal Range) These extreme tides are called Spring Tides.