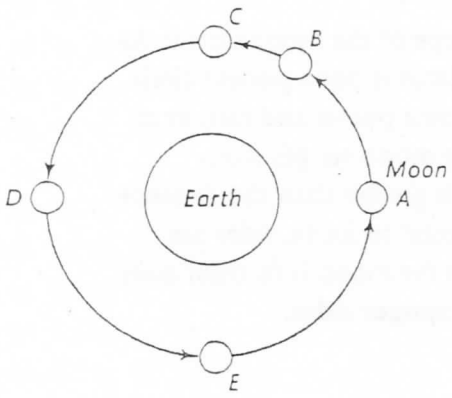
Name _____ Date _____ Class _____

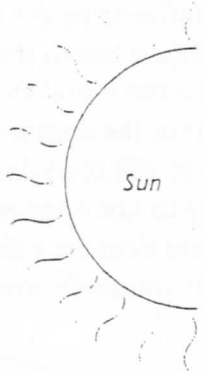
SECTION 4-2 REVIEW AND REINFORCE

Tides

◆ Understanding Main Ideas

Study the diagram and then complete the following statements.





1. The greatest difference between high and low tide occurs when the moon is in positions _____ and _____.
2. A neap tide occurs when the moon is in position _____ or _____.
3. When the moon is in position D, Earth experiences a _____ tide.
4. When the moon is in position E, high tides are _____ than when the moon is in position A.
5. Earth experiences a _____ tide when the moon is in position A.
6. When the moon is in position B, the difference between high and low tides is _____ than when the moon is in position C.

◆ Building Vocabulary

Match each term with its definition by writing the letter of the correct definition on the line beside the term.

_____ 7. neap tide
_____ 8. high tide
_____ 9. spring tide
_____ 10. low tide

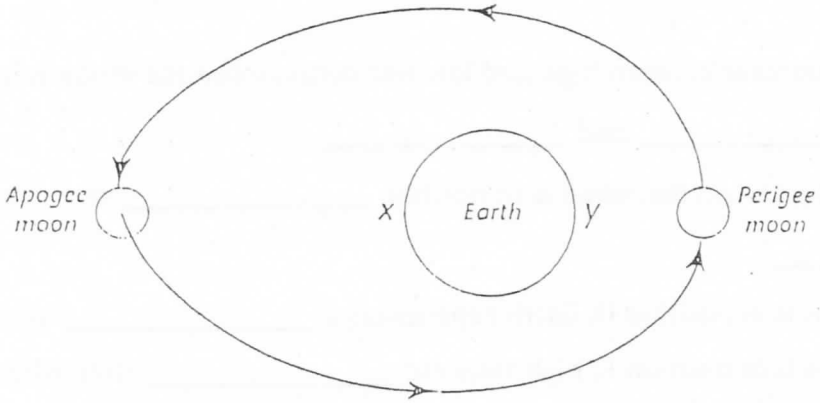
a. tide with the greatest difference between high and low tide
b. tide in which water reaches its lowest point on the beach each day
c. tide with the least difference between high and low tide
d. tide in which water reaches its highest point on the beach each day

Name _____ Date _____ Class _____

What Affects the Height of Tides?

Just how large high tides are at a given place and time depends on many factors. One factor that influences the height of tides is the seasons. During winter and summer, one hemisphere is tilted toward the sun. The moon's pull on Earth's waters is exerted on a diagonal. When this occurs, areas north and south of the equator have a large high tide and a small high tide each day.

Another factor influencing the height of tides is the shape of the moon's orbit. As you can see in the figure below, the moon's path around Earth is not a perfect circle. Rather, its path has a more oval shape, closer to Earth at some points and farther at others. Because of this, the distance between Earth and the moon ranges from 357,000 kilometers to 408,000 kilometers. This difference is greater than the distance from New York City to Los Angeles. When the moon is closest to Earth, tides are unusually high. These tides are called **perigee tides.** When the moon is farthest away from Earth, tides are unusually low. These tides are called **apogee tides.**



Answer the following questions on a separate sheet of paper.

1. During spring and fall, how much variation in the height of daily high tides would you expect to find at points X and Y? Why?
2. Compare and contrast perigee and spring tides.
3. Like the moon, Earth's orbit is not circular, but elliptical. How do you think this might affect Earth's tides?