

Think Critically Planetary motion

Kepler's laws of planetary motion demonstrate that each planet orbits around the sun in a shape called an ellipse rather than a circle. This means that the planet does not maintain a consistent distance from the Sun. Kepler found that an imaginary line between the Sun and the planet sweeps out equal amounts of area in an equal amount of time. Kepler also discovered a mathematical relationship between the size of a planet's ellipse and its orbital period.

Use the term to label the diagram by selecting the best answer for each blank.

Foci

Major axis

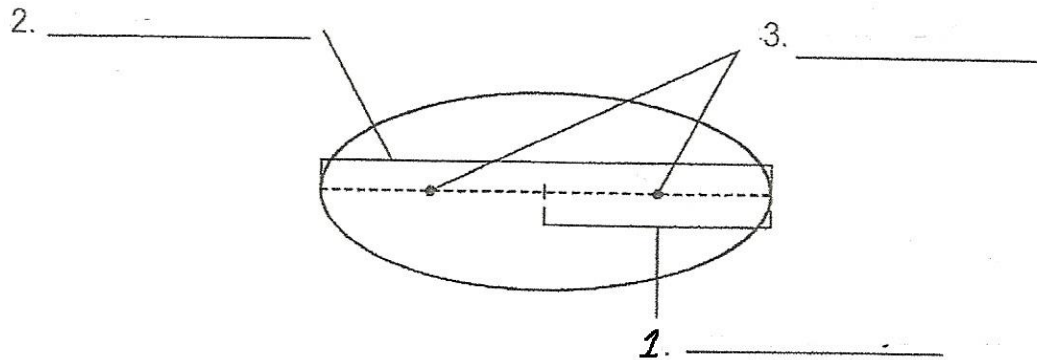
Perihelion

Semi major axis

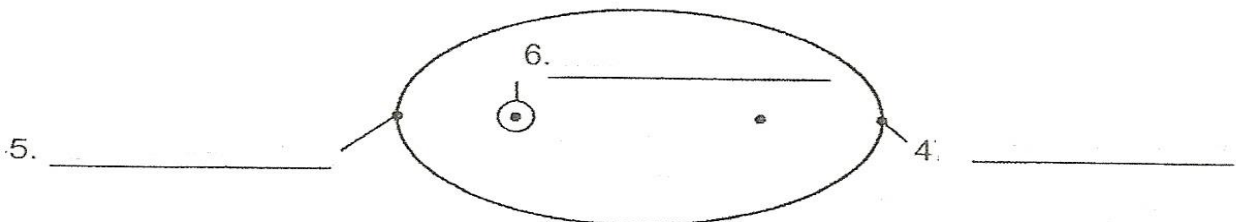
Aphelion

Sun

Elliptical Orbit of a Planet



Orbit of Pluto



How does the model of the solar system in which the planets have elliptical orbits explain the difference in the speed of the planets?