

Part 9: Lab Practical

Station 2: Locating an Epicenter

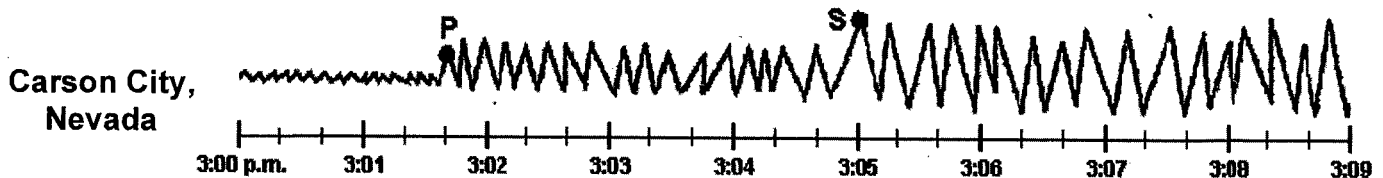
Directions: You will determine the location of an epicenter using data collected at three seismic stations.

1. Seismic Station 1 is in Austin, Texas. On your answer sheet, the distance from the epicenter to Austin is drawn with a circle.
2. Seismic Station 2 is in Trenton, New Jersey. Using the information given, draw a circle for the distance to Trenton.

Distance from Seismic Station Trenton to the Epicenter

1,700km

3. Seismic Station 3 is in Carson City, Nevada. Use the seismograph below to determine the difference in arrival time of the P-wave and the S-wave. Record this value in the space provided on your answer sheet.



4. Using the Earthquake chart provided, determine the epicenter distance for Carson City. Record this value in the space provided on your answer sheet.
5. Use your calculated distance and a compass to plot a circle on the map for the epicenter distance for Carson City.
6. Draw an X on the map where the epicenter is located.

Part 9: Lab Practical

Station 3: Constructing and Analyzing an Elliptical Orbit

Review: Rounding to the nearest tenth and thousandth.

Rounding Directions: Round the following numbers to the nearest *tenths place*.

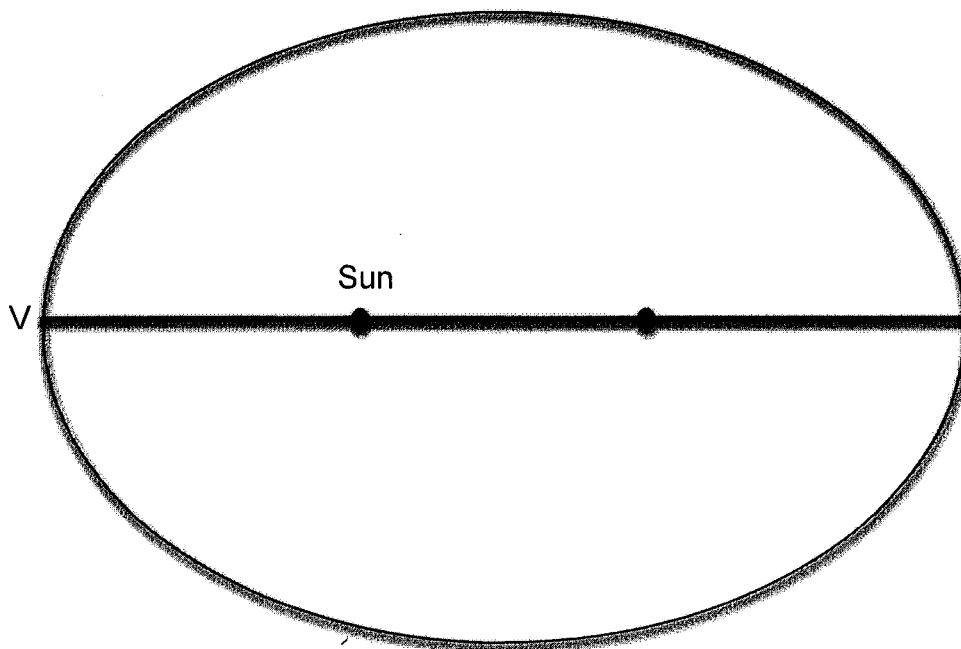
1. 17.1257 = 17.1
2. 85.7899 = 85.8
3. 45.63258 = 45.6
4. 101.15342 = 101.2
5. 6.99652 = 7.0
6. 9.608712 = 9.6

Rounding Directions: Round the following numbers to the nearest *thousandths place*.

1. 17.1257 = 17.126
2. 85.7899 = 85.790
3. 45.63258 = 45.633
4. 101.15342 = 101.153
5. 6.99652 = 6.997
6. 9.608712 = 9.609

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Asteroid #1



Distance between foci,
to the nearest tenth of a centimeter

3.6 cm

Length of major axis,
to the nearest tenth of a centimeter

11.7 cm

Eccentricity of the asteroid's orbit (constructed ellipse), to
the nearest thousandth

.308

$$3.6\text{cm}/11.7\text{cm} = .308$$

Use your reference table to fill-in the eccentricity of each planet below. Then, compare the eccentricity of Asteroid #1 to the eccentricity of each planet by placing an X in the column that best describes the relationship.

Planet	Eccentricity	Asteroid's orbit is less eccentric than the planet's orbit	Asteroid's orbit is more eccentric than the planet's orbit	Asteroid's orbit and the planet's orbit are equally elliptical
Mercury	.206	No	Yes	No
Venus	.007	No	Yes	No
Earth	.017	No	Yes	No
Mars	.093	No	Yes	No
Jupiter	.048	No	Yes	No
Saturn	.054	No	Yes	No
Uranus	.047	No	Yes	No
Neptune	.009	No	Yes	No

Explain how the eccentricity data supports each of your answers on the table above.

The eccentricity of Asteroid #1 is .308, which is greater than all of the eccentricities of each planet's orbit.