D C B A A B C D


Sun
x

DETERMINING THE ECCENTRICITY OF AN ELLIPSE

$$\textbf{Eccentricity} = \frac{\textit{distance between foci}}{\textit{length of major axis}}$$

	DISTANCE BETWEEN FOCI	LENGTH OF MAJOR AXIS	ECCENTRICITY *(to nearest thousandth)*
ELLIPSE A	**cm**	**cm**	**0. _ _ _**
ELLIPSE B	**cm**	**cm**	**0. _ _ _**
ELLIPSE C	**cm**	**cm**	**0. _ _ _**
ELLIPSE D	**cm**	**cm**	**0. _ _ _**
ORBIT AROUND THE SUN	**cm**	**cm**	**0. _ _ _**

ELLIPSE LAB SUMMARY

1. As the distance between the foci increased, how did the eccentricity change?

2. As the eccentricity gets closer to zero, how does the shape of the ellipse change?

3. If you could move the two thumbtacks to one single point, what shape would you draw?

4. What is the eccentricity of a perfect circle?

5. If you could squash an ellipse to make it completely flat, the foci will move to the very ends of the resulting line segment. What would its eccentricity be?

6. According to the ESRT, which planet has the most circular orbit?

7. According to the ESRT, which planet has the most elliptical orbit?

8. Saturn and the Earth's Moon have very similar orbits. Are they the same size, shape, or both?

9. Halley's Comet has an **orbital eccentricity** of almost 0.97. How would you describe its orbit?

10. The elliptical orbit of every planet has two foci. What is ALWAYS located at one focus? (The other focus is empty space.)

11. What is located at one focus of the Earth's Moon's elliptical orbit?

12. What is located at one focus of a comet's orbit?

13. When a planet is closest to the sun, what is true about its speed and the gravitational attraction between it and the Sun?

14. If you had a traffic cone and a Samurai sword, how could you make an ellipse?

15. Describe how you drew ellipses in class.