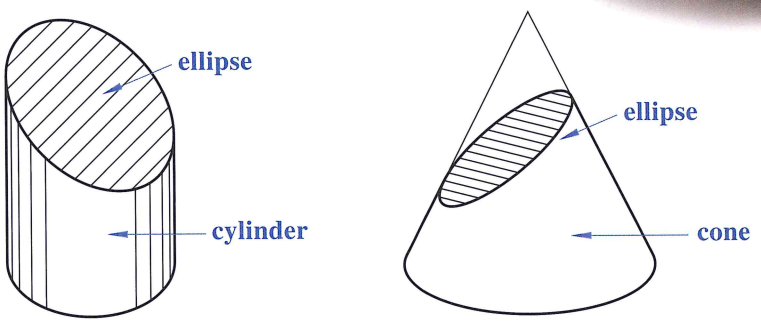
Chapter 12

The Ellipse

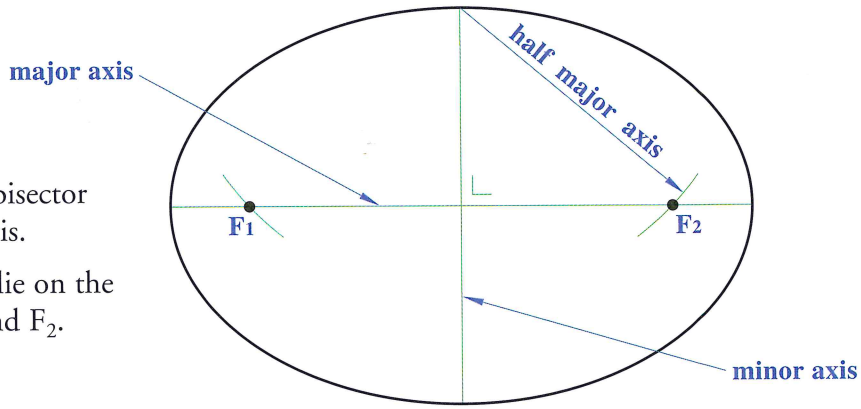
The circle is a very common curve in the world around us, but it is not the curve we most often see. This is because a circle seen from an angle appears to be another curve called an **ellipse**. The figure across shows some examples of circles that appear as ellipses in everyday life.

When a cylinder or a cone is cut at an angle to its axis as shown in the figure below, the resulting section is an **ellipse**.



Parts of an Ellipse

- The **major axis** is the longest line that can be drawn across the ellipse.
- The **minor axis** is the perpendicular bisector through the midpoint of the major axis.
- The **focal points** are two points that lie on the major axis. They are denoted by F_1 and F_2.



The distance from one end of the minor axis to a focal point is always equal to half the length of the major axis.

This information allows us to locate the focal points when we are given the major and minor axes:

1. Set your compass to a length equal to half the length of the major axis.
2. Position the compass point at one end of the minor axis, as shown in the figure above, and swing arcs to cut the major axis at F_1 and F_2 respectively.

Answer Worksheet 12A