Graphing Calculator Practice

Mirrors

Mirrors produce many types of images: virtual or real, enlarged or reduced, and upright or inverted. The mirror equation and the magnification equation can help sort things out. The mirror equation relates the object distance (p), image distance (q), and focal length (f) to one another.

$$\frac{1}{p}+\frac{1}{q}=\frac{1}{f}$$

Image size can be determined from the magnification equation.

$$M=-\frac{q}{p}$$

Magnification values that are greater than 1 or less than –1 indicate that the image of an object is larger than the object itself. Negative magnification values indicate that an image is real and inverted, while positive magnification values indicate that an image is virtual and upright.

In this graphing calculator activity, the calculator will produce a table of image distance and magnification for various object distances for a mirror with a known focal length. You will use this table to determine the characteristics of the images produced by a variety of mirrors and object distances.

Visit go.hrw.com and enter the keyword **HF6LGTX** to find this graphing calculator activity. Refer to **Appendix B** for instructions on downloading the program for this activity.