Physics: Form WS9.7.1A Name _____

LIGHT Date _____ Period _____

Lenses

A lens is a transparent object with at least one curved side that causes light to bend. The more curved the sides of the lens are, the more light bends. In this way, lenses can be used to control the bending of light. A convex lens is a lens that is thicker at the center than at the edge. Parallel light rays traveling through a convex lens converge at the focal point. The more curved the lens is, the closer the focal point is to the lens, and the shorter the focal distance is. Image formation is similar to that of a concave mirror. If the object is further than two focal lengths from the lens, the image is real, inverted, and smaller than the object, but the image gets larger as the object is moved towards the lens. If the object is closer to the lens than one focal length, the image is virtual, right side up, and larger than the object, as in a magnifying glass. A concave lens is a lens that is thicker at the edge than at the center. A concave lens causes light rays to diverge, so they are not brought into focus. The image formed is virtual, upright, and smaller than the object.

Answer the questions below based on the reading above and on your knowledge of physics.

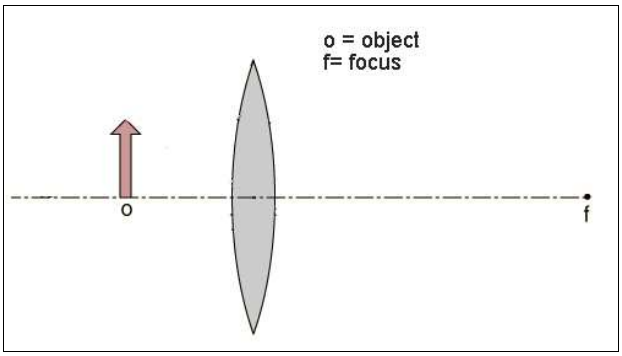
1. What is the basic job of lenses? _____

2. How does the curvature of a lens affect the focal distance? _____

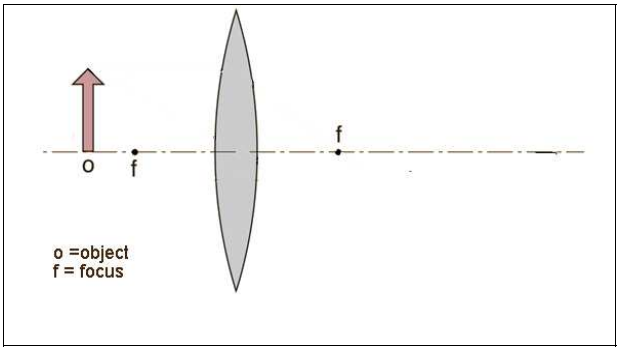
   _____

3. Referring to the diagrams below, identify the type of lens, draw the ray diagram and image, and identify the image type.

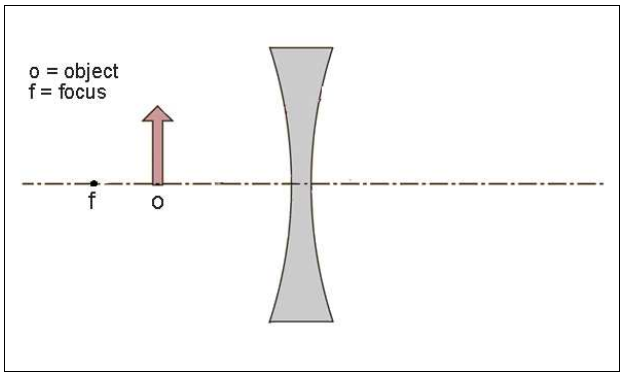
a.



b.



c.



	Type of Lens	Type of Image
a.		
b.		
c.		