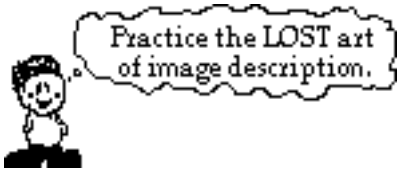
Ray Diagrams for Converging Lenses

Read from **Lesson 5** of the **Refraction and Lenses** chapter at **The Physics Classroom:**

http://www.physicsclassroom.com/Class/refrn/u14l5da.html
http://www.physicsclassroom.com/Class/refrn/u14l5db.html

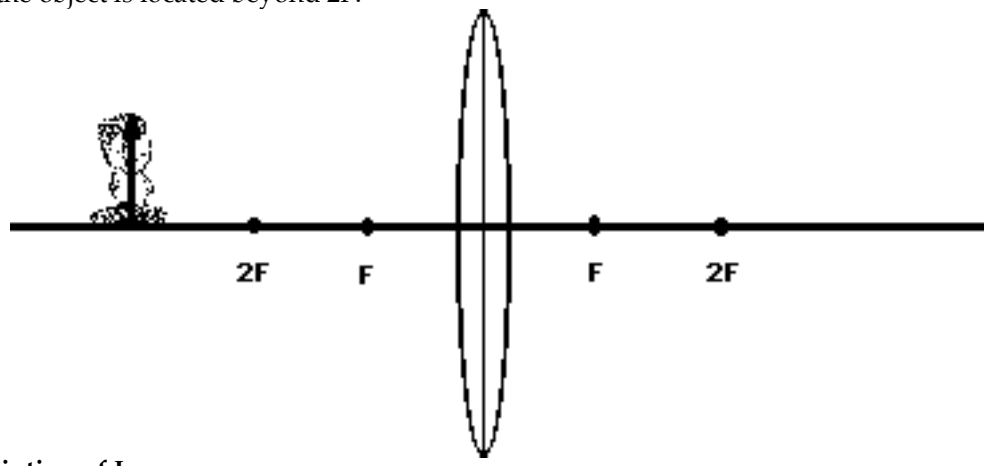
MOP Connection: Refraction and Lenses: sublevels 8 and 9

For the following lenses and corresponding object positions, construct ray diagrams. Then describe the **L**ocation of the image, **O**rientation (upright or inverted) of the image, the relative **S**ize of the image (larger or smaller than object), and the **T**ype of image (real or virtual). For **Case 4**, merely construct the ray diagram.



NOTE: 1) All light rays have arrowheads which indicate the direction of travel of the ray.
2) Always draw in the image once located (an arrow is a good representation).
3) Exactness counts. Use a straight-edge and be accurate.

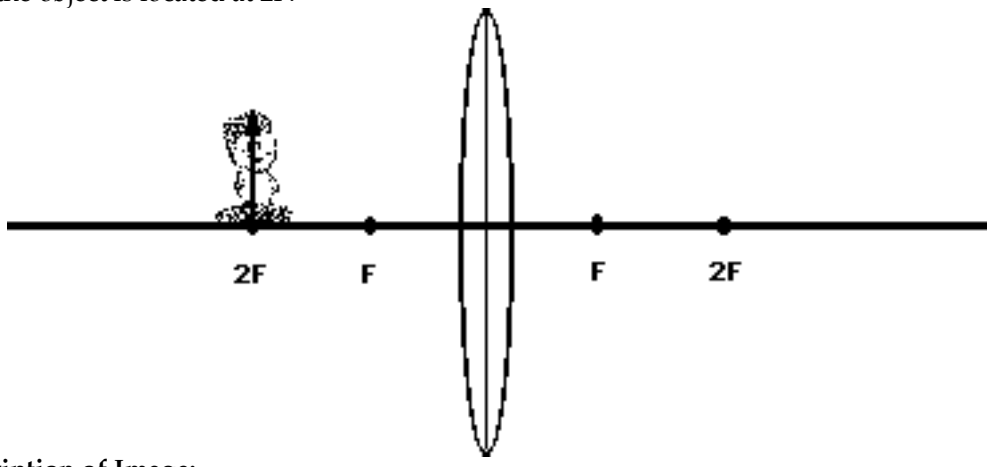
Case 1: If the object is located beyond 2F:



Description of Image:
Location: _____

O: Upright or Inverted **S:** Magnified or Reduced **T:** Real or Virtual

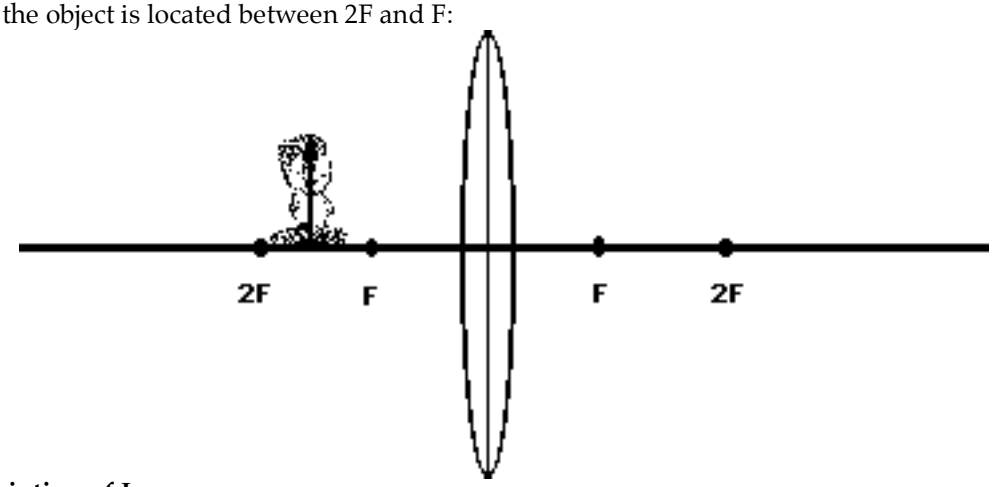
Case 2: If the object is located at 2F:



Description of Image:
Location: _____

O: Upright or Inverted **S:** Magnified or Reduced **T:** Real or Virtual

Case 3: If the object is located between 2F and F:

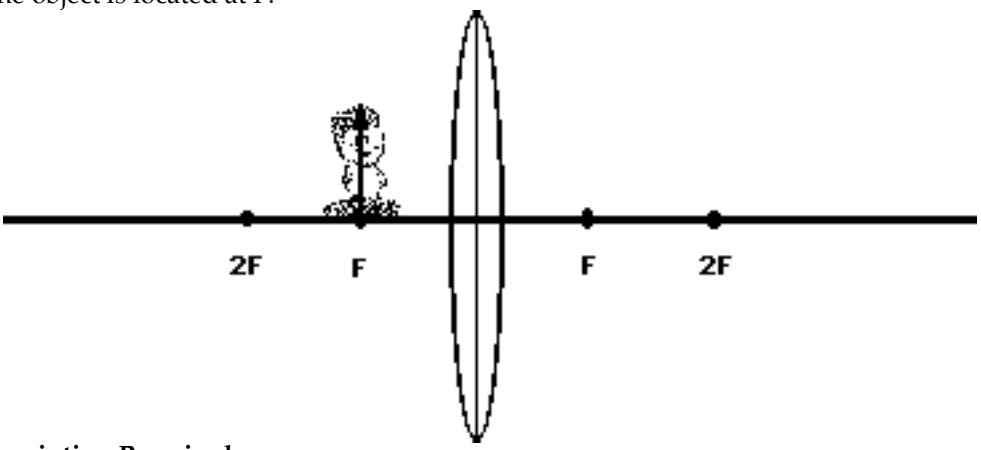


Description of Image:

Location: _____

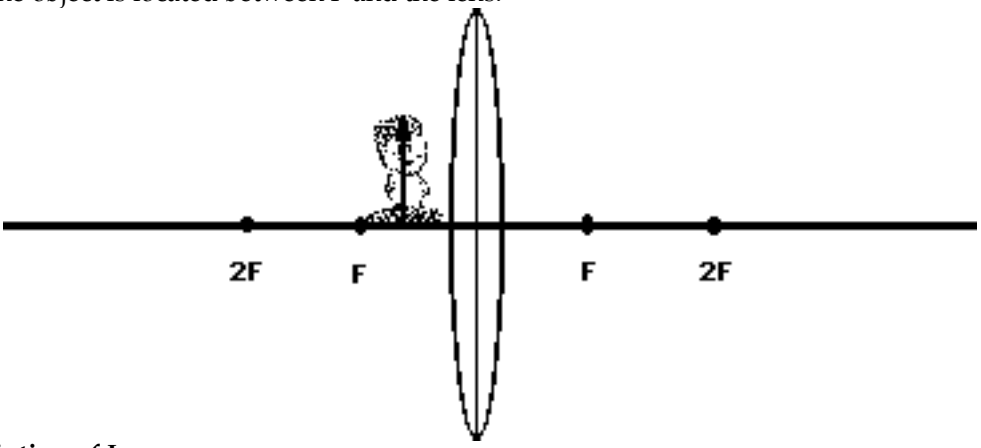
O: Upright or Inverted **S:** Magnified or Reduced **T:** Real or Virtual

Case 4: If the object is located at F:



No Description Required

Case 5: If the object is located between F and the lens:



Description of Image:

Location: _____

O: Upright or Inverted **S:** Magnified or Reduced **T:** Real or Virtual

