

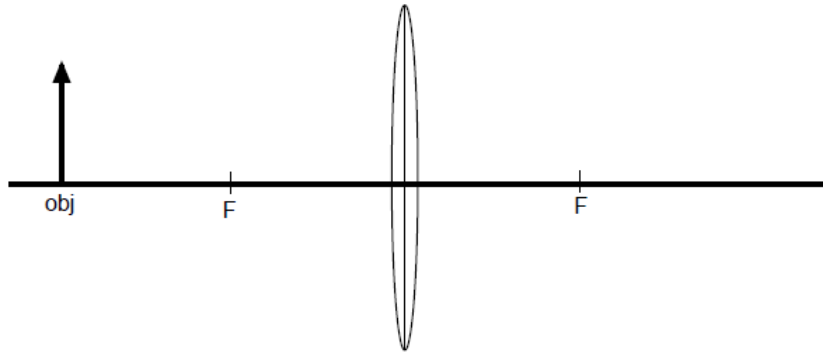
Name: \_\_\_\_\_ Block: \_\_\_\_\_

## Lenses

In each of the following problems, an object is placed in front of a convex or concave lens, as shown. In all problems, the focal length of the lens is 6.0 cm.

1. The object is 4.2 cm tall and is placed 12 cm from the lens.

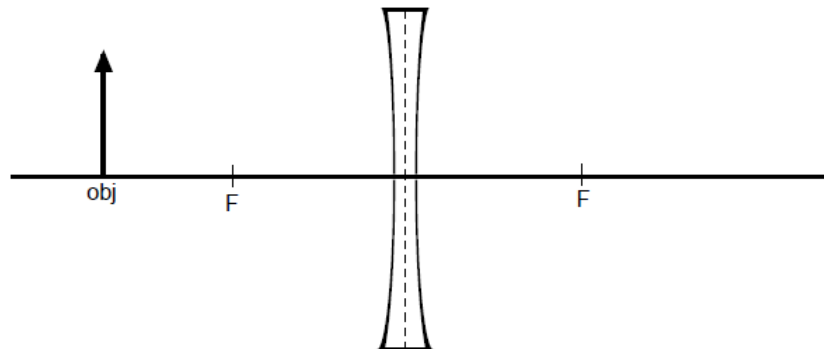
- (a) Show the location and orientation of the image by accurately drawing a ray diagram on the image below.



- (b) Calculate the height and orientation of the image, and its distance from the lens.

2. The object is 4.2 cm tall and is placed 12 cm from the lens.

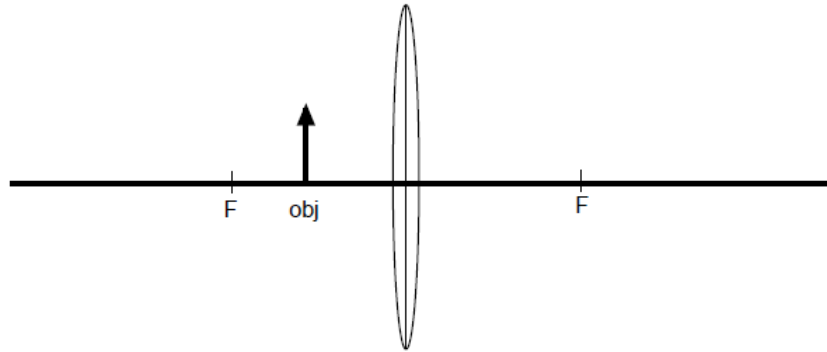
- (a) Show the location and orientation of the image by accurately drawing a ray diagram on the image to the right.



- (b) Calculate the height and orientation of the image, and its distance from the lens.

3. The object is 2.7 cm tall and is placed 3.4 cm the lens.

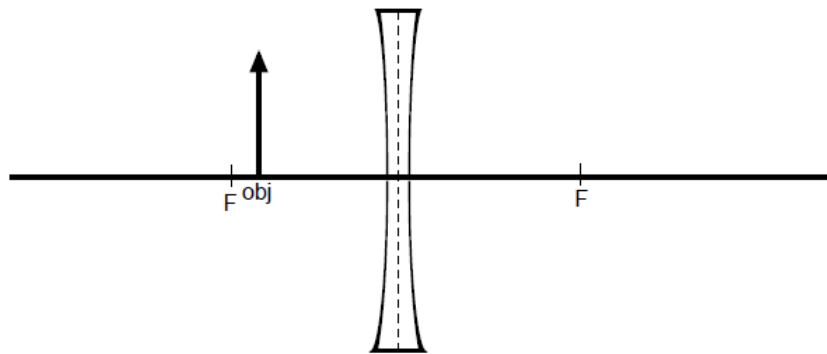
- (a) Show the location and orientation of the image by accurately drawing a ray diagram on the image below.



- (b) Calcualte the height and orientation of the image, and its distance from the lens.

4. The object is 2.7 cm tall and is placed 5.1 cm the lens.

- (a) Show the location and orientation of the image by accurately drawing a ray diagram on the image below.



- (b) Calcualte the height and orientation of the image, and its distance from the lens.