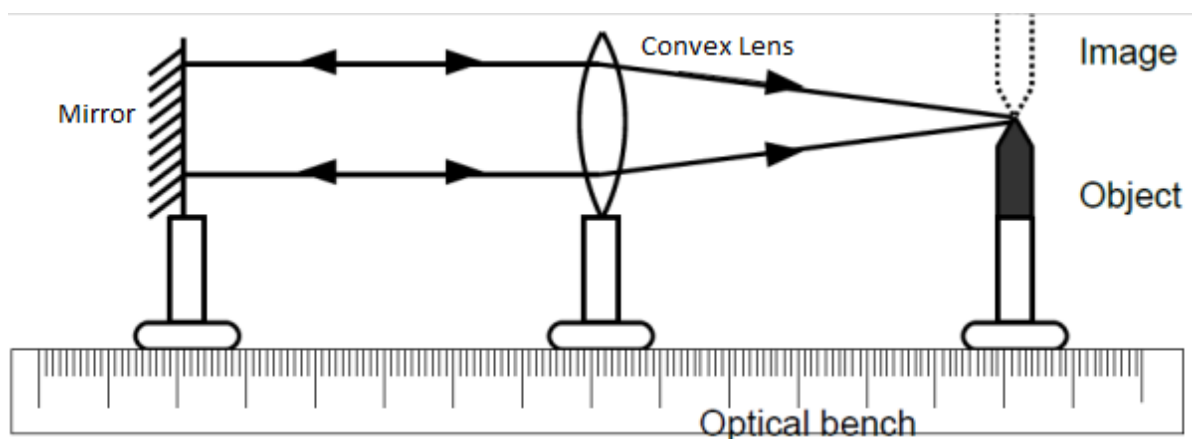


## PRACTICAL-5

### Focal length of a convex lens by Plane Mirror method

**AIM:** To find the focal length of a convex lens by the plane mirror method.

**APPARATUS:** Optical bench, plane mirror, object pin, meter scale and holders



#### **PROCEDURE:**

1. Arrange the plane mirror, convex lens and object pin with help of holder on the optical bench as shown in the figure and align them properly with the help of a meter scale.
2. Fix the position of the plane mirror at one end of the optical bench. Now put the convex lens at 20cm distance from the plane mirror and locate the position of image behind the convex lens in a way to have no parallax between the image and object pin.
3. Record the position of the plane mirror, convex lens and the object pin. Keep the distance between the plane mirror and convex lens as 30cm, 40cm... for other set of the readings
4. The distance between the convex lens and object pin is the focal length of the convex lens.

**OBSERVATIONS:**

1. Range of meter scale \_\_\_\_\_ cm
2. Least count of meter scale \_\_\_\_\_ cm

Sr. No.	Position of mirror (cm)	Position of convex lens (cm)	Position of object pin (cm)	Focal length (cm)	Mean focal length (cm)
1.					
2.					
3.					
4.					
5.					

**RESULT:**

**Focal length of the given Convex lens \_\_\_\_\_ cm.**

**PRECAUTIONS:-**

- a. The plane mirror, convex lens and object should be aligned properly.
- b. Parallax has to be removed between object and image before taking the reading.
- c. Midpoint of the mirror, optical centre of the convex lens and the top of the object pin should be at the same vertical height.

**VIVA-VOCE:-**

- a. Define the focus of a convex lens.
- b. What is the radius of curvature of the plane mirror?
- c. Why there is no impact of change in distance between plane mirror and convex lens on the position of image with respect to the convex lens?
- d. Is it possible to have virtual image with convex lens?