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Calculate the focal length of a convex mirror using a convex lens

Aim:

Determination of the radius of convexity of a convex mirror.

Calculate the focal length of a convex mirror.

Introduction:

In light experiments and when using mirrors and lenses, it is necessary to know the position of the image, where the object used is pointed so that the subject of the image is determined.

We use a piece of metal one meter long with divisions on its edges where mirrors and lenses are fixed on special holders and the body is usually pointed and fixed on a holder and the holder moves on the ruler and has a sign in the middle to indicate the position of the pointed object, lens or mirror.

The Theory:

Convex mirror

A convex mirror is a curved mirror in which the reflecting surface bulges towards the light source. Convex mirrors reflect light outwards; therefore they are not used to focus light. A convex mirror is also known as fish eye mirror or diverging mirror.

The image formed by a convex lens is virtual and erect, since the focal point (F) and the center of curvature (2F) are both imaginary points "inside" the mirror that cannot be reached. As a result, images formed by these mirrors cannot be projected on a screen, since the image is inside the mirror. Therefore, its focal length cannot be determined directly. The

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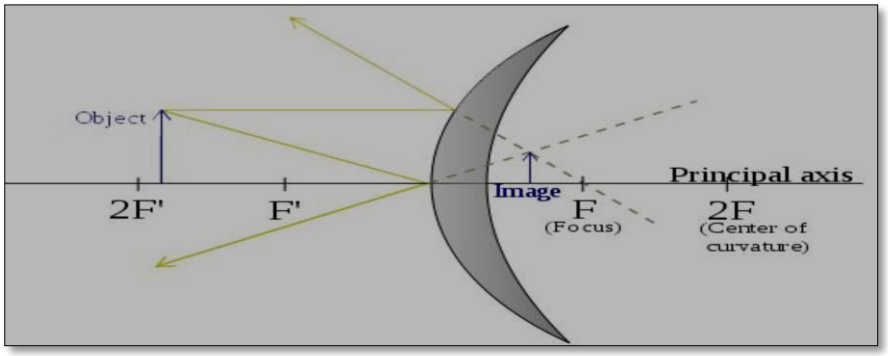
image is smaller than the object, but gets larger as the object approaches the mirror. The ray diagram of a convex mirror is shown below.



Accounts:

1- We measure the distance from the body to the lens u and calculate the distance from the lens v.

2- We measure the distance d between the lens and the mirror and subtract it from v, we get r.

We calculate the focal length of the convex mirror $f = r / 2$.

Dissection:

Q.1 Define a mirror.

Q.2 Describe different types of mirrors.

Q.3 What is the radius of curvature of a plane mirror?

Q.4 What type of mirror is used for dressing table and why?