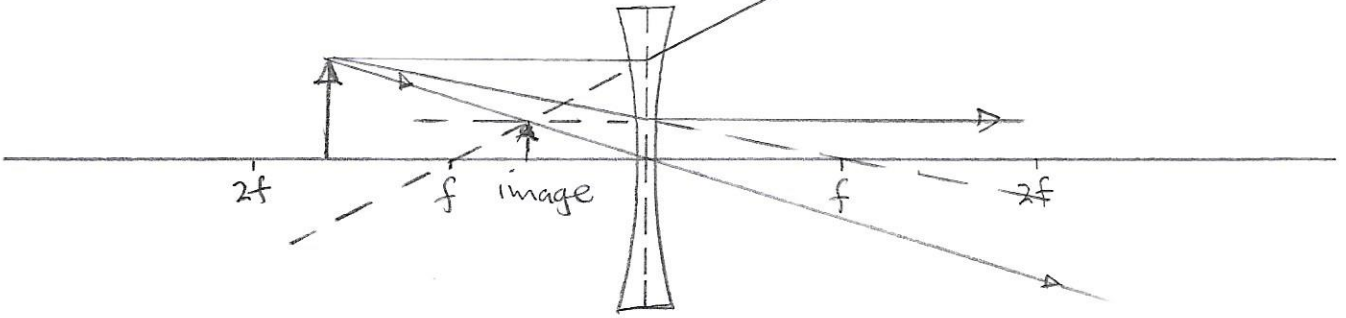


10. (a) Find the image by drawing the following diagram and using at least ² three rays. (b) After looking at the image you just found, is this image smaller, larger, or the same size as the object? (c) Is the object inverted or upright? (d) Is the image real or virtual? (e) Find the image distance if the object distance is 10 cm and the focal length is -6 cm. Show your work.



$$d_i = \frac{f d_o}{d_o - f} = \frac{(-6\text{cm})(10\text{cm})}{10\text{cm} - (-6\text{cm})}$$

$$d_i = -3.75\text{cm}$$

Questions:

- Smooth surfaces reflect light in one direction. This is called **specular** reflection.
 - Rough surfaces reflect light in many directions. This is called **diffuse** reflection.
- When drawing lines to locate images, all distances measured from the **mirror**.
- For flat mirrors, **image** distance = **object** distance and **image** height = **object** height.
- A flat mirror always forms a **virtual** image that seems to come from inside the mirror.
- Virtual images **can't be displayed on a physical surface**.
- Curved Mirrors are either **convex** or **concave**.
- With concave mirrors, the **concave** surface faces the object.
 - With convex mirrors, the **convex** surface faces the object.
- Concave mirrors form **real** or **virtual** images.
- With a real image, **reflected light rays intersect at one point**.
- A spherical concave/convex mirror is a **small portion of a sphere**.
- The principle axis is a line drawn **from the center of the mirror**. All distances are drawn from **the principle axis**.
- The focal distance is **half the distance** of the mirror's radius of curvature.
- For curved mirrors, the focal point is the point **where all parallel rays converge after they're reflected off a concave mirror**.
- Convex mirror is an **outwardly curved** mirror that is a portion of a sphere. A convex mirror **diverges** incoming light rays as though they are coming from **behind** the mirror.