

### Answer on Question #52735-Physics-Optics

How far in front of a concave spherical mirror with a focal length  $f$  would you place a candle so that it appears to burn from both sides?

4  $f$

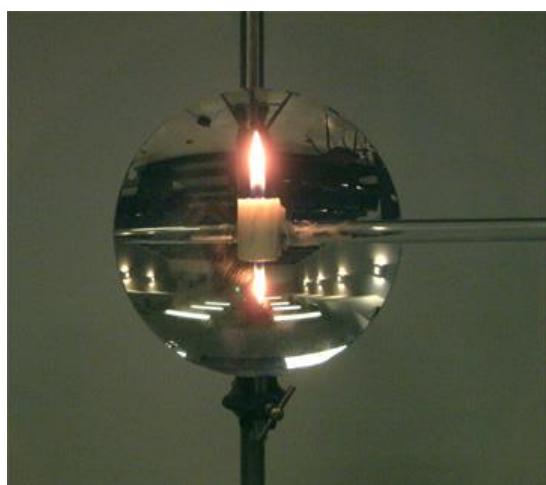
2  $f$

$f$

1/2  $f$

### Answer

2  $f$ .



A horizontal candle is seen burning at one end (flame up) and at the other (flame down) when viewed at the candle's level. It is an illusion caused by the spherical concave mirror. When an object is at the center of curvature of a spherical concave mirror a real image is formed that is inverted and the same size as the object.

The center of curvature of a spherical concave mirror is at  $R = 2f$