A certain concave mirror is found to form an image of the Sun at a distance of 8 m from the mirror. What is the radius of curvature of this mirror?

8 m

12 m

16 m

24 m

Solution:

Since the Sun is located at very large distance, its image is formed at the focal plane. Therefore, the focal length of the given mirror is

$$f = 8 \text{ m}$$

It is known that the radius of curvature of the concave mirror is twice the focal length:

$$R = 2f = 16 \text{ m}$$

Answer: 16 m.