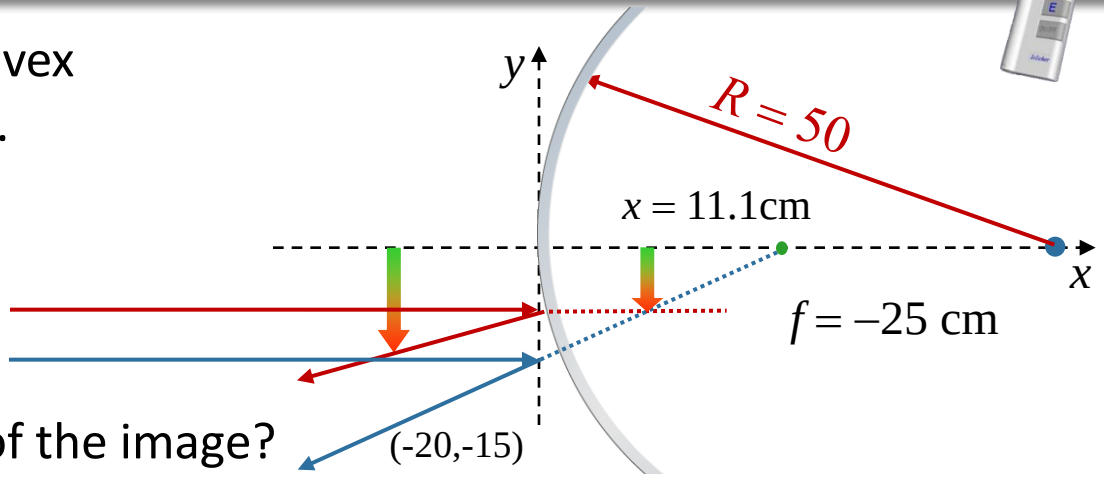
Calculation

An arrow is located in front of a convex spherical mirror of radius $R = 50\text{cm}$.
The tip of the arrow is located at $(-20\text{cm}, -15\text{cm})$.



What is the y coordinate of the tip of the image?

A) -11.1 cm B) -10.7 cm C) -9.1 cm **D) -8.3cm**

Magnification equation → $M = -\dfrac{S'}{S}$

$s = 20$ cm

$s' = -11.1$ cm

$M = 0.556$

$$y_{image} = 0.55\, y_{object} = 0.556*(-15\text{ cm}) = -8.34\text{ cm}$$