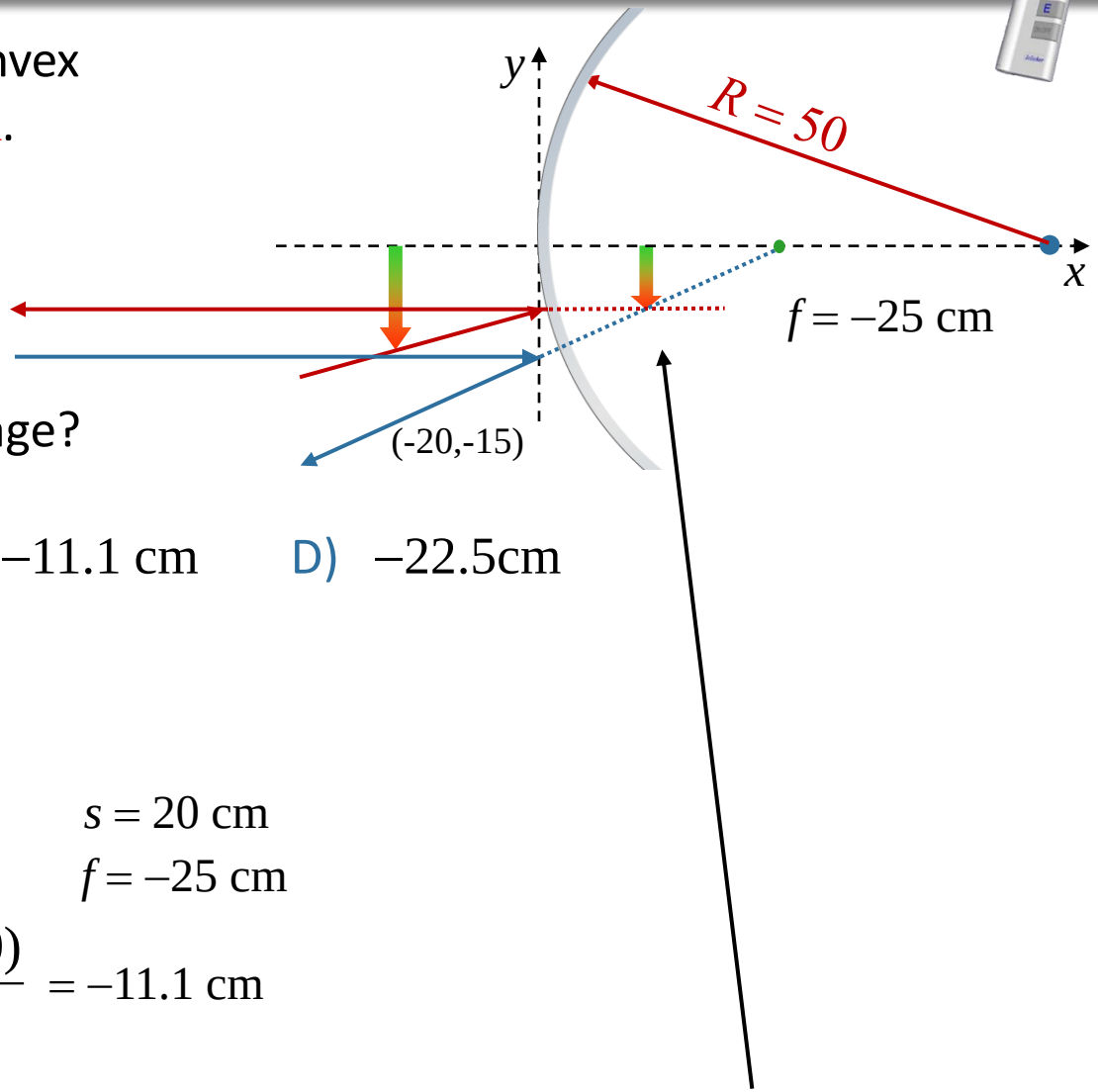
Calculation

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 x coordinate of the image?

A) 11.1 cm B) 22.5 cm C) –11.1 cm D) –22.5cm

Mirror equation → $\frac{1}{S'} = \frac{1}{f} - \frac{1}{S}$

→ $S' = \frac{fS}{S - f}$ $s = 20$ cm, $f = -25$ cm

→ $S' = \frac{(-25)(20)}{20 + 25} = -11.1$ cm

Since $s' < 0$ the image is virtual (on the "other" side of the mirror)