Consider the setup shown below.

*Given:* The object distance \( p = \frac{f}{2} \)

Find the image distance \( q \).

A) \( q = \frac{f}{2} \)

B) \( q = f \)

C) \( q = -\frac{f}{2} \)

D) \( q = -f \)
\[ \frac{1}{q} = \frac{1}{f} - \frac{1}{p} = -\frac{1}{f}. \] So \( q = -f \). A negative image distance implies that it is virtual. See sketch.

Answer D.