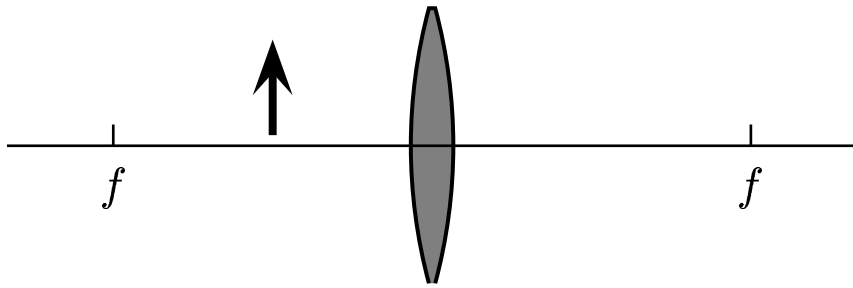


Consider the setup shown below.

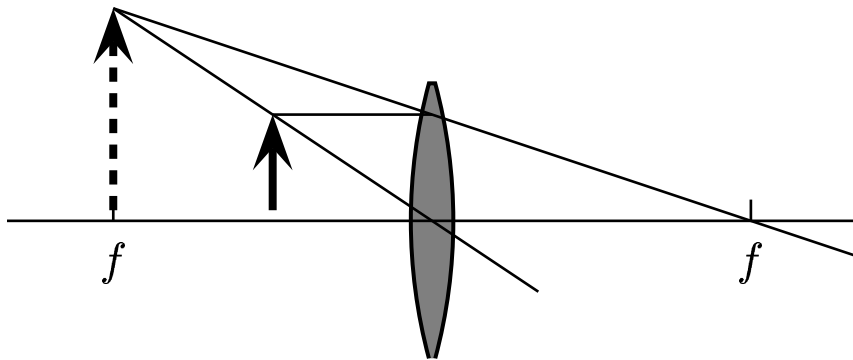
Given: The object distance $p = \frac{f}{2}$



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**.