

Exo 1:

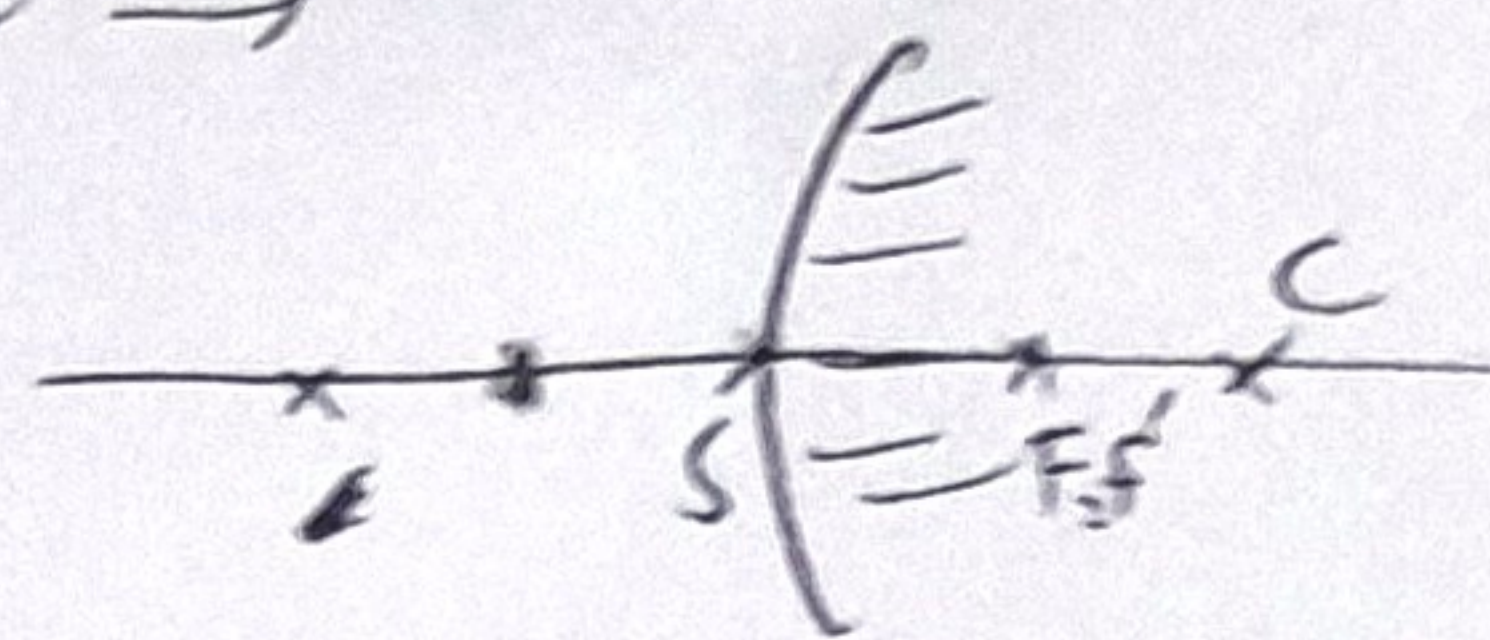
$SC = +1,2m$

A/ 1/ Le miroir est divergent

$SF = SF' = \frac{SC}{2}$

2/ Foyer objet: $SC = \frac{SC}{2} = \frac{1,2}{2} = +0,6m$

Foyer image: $SF' = \frac{SC}{2} = +0,6m$



3/ relation de conjugaison: $\frac{1}{SA'} + \frac{1}{SA} = \frac{2}{SC}$

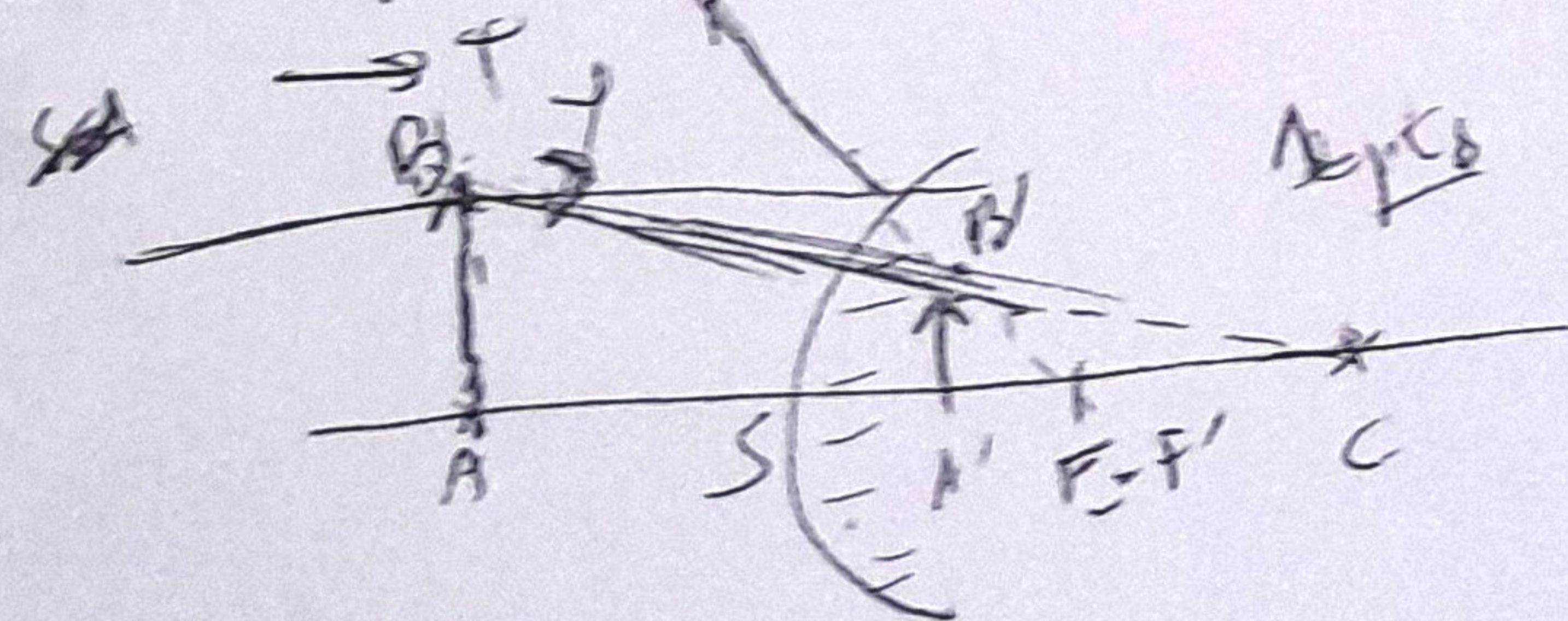
image est 2 fois plus grande: on a $\gamma = -\frac{SA'}{SA}$ et $\gamma = \frac{A'B'}{AB} = \frac{1}{2}$

$\Rightarrow SA' = -\frac{1}{2}SA$

$\Rightarrow -\frac{2}{SA} + \frac{1}{SA} = \frac{2}{SC} \Rightarrow -\frac{1}{SA} = \frac{2}{SC} \Rightarrow SA = -\frac{1}{2}SC = -0,6m$

$SA' = -\frac{1}{2}SA = +0,3m$

l'objet est réel



B/ 1/ Le miroir est convergent.

$SC = -1,2m$

2/ Foyer objet: $SC = \frac{SC}{2} = -0,6m$

" image: $SF' = \frac{SC}{2} = -0,6m$

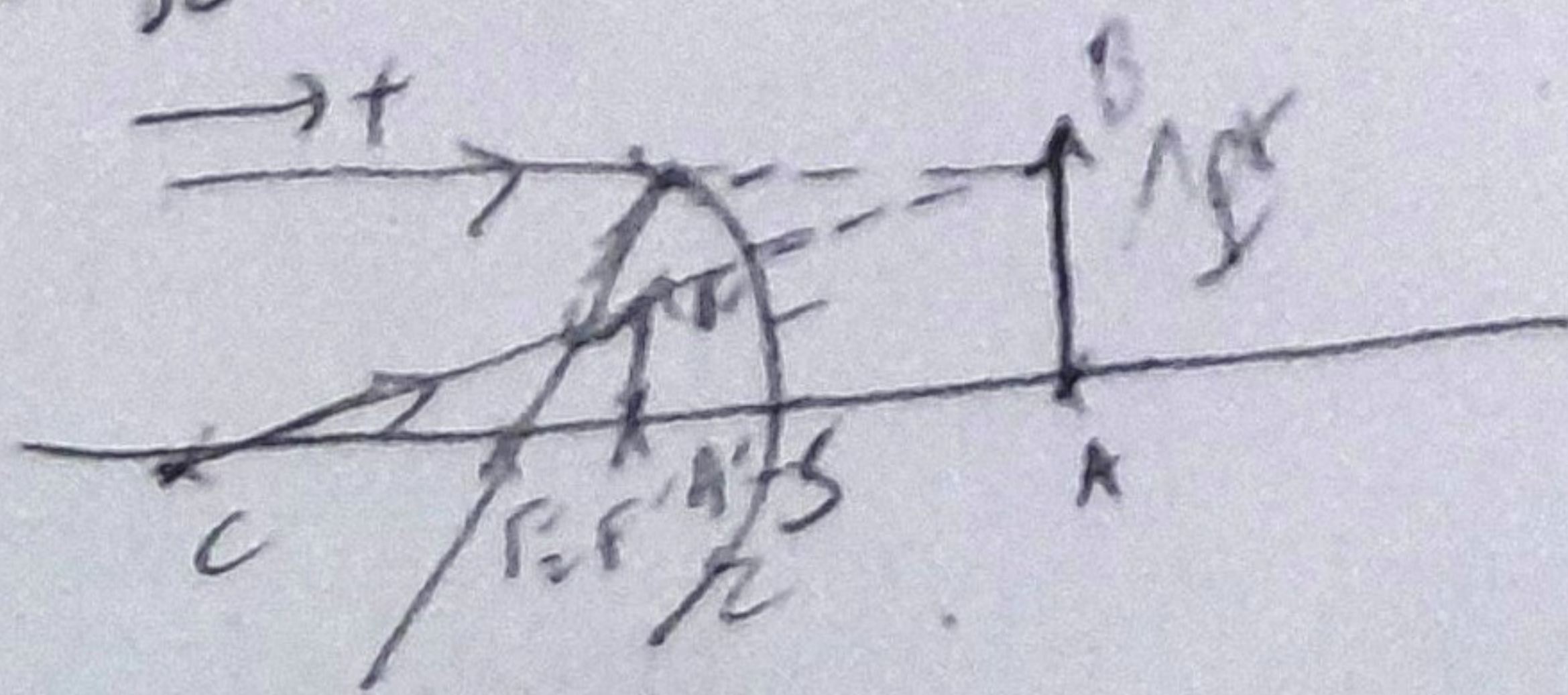
image droite et 2 fois plus petite que l'objet $\gamma = \frac{1}{2}$

$\gamma = -\frac{SA'}{SA} = \frac{1}{2} \Rightarrow SA' = -\frac{1}{2}SA$

$\frac{1}{SA'} + \frac{1}{SA} = \frac{2}{SC} \Rightarrow -\frac{2}{SA} + \frac{1}{SA} = \frac{2}{SC} \Rightarrow SA = -\frac{SC}{2} = +0,6m$

l'objet est virtuel

on a $SA' = -\frac{1}{2}SA = -0,3m$



Exercice 2: 3 pts

1/ lentille convergente: $\Rightarrow \overline{SF'} = f = +40 \text{ cm}$

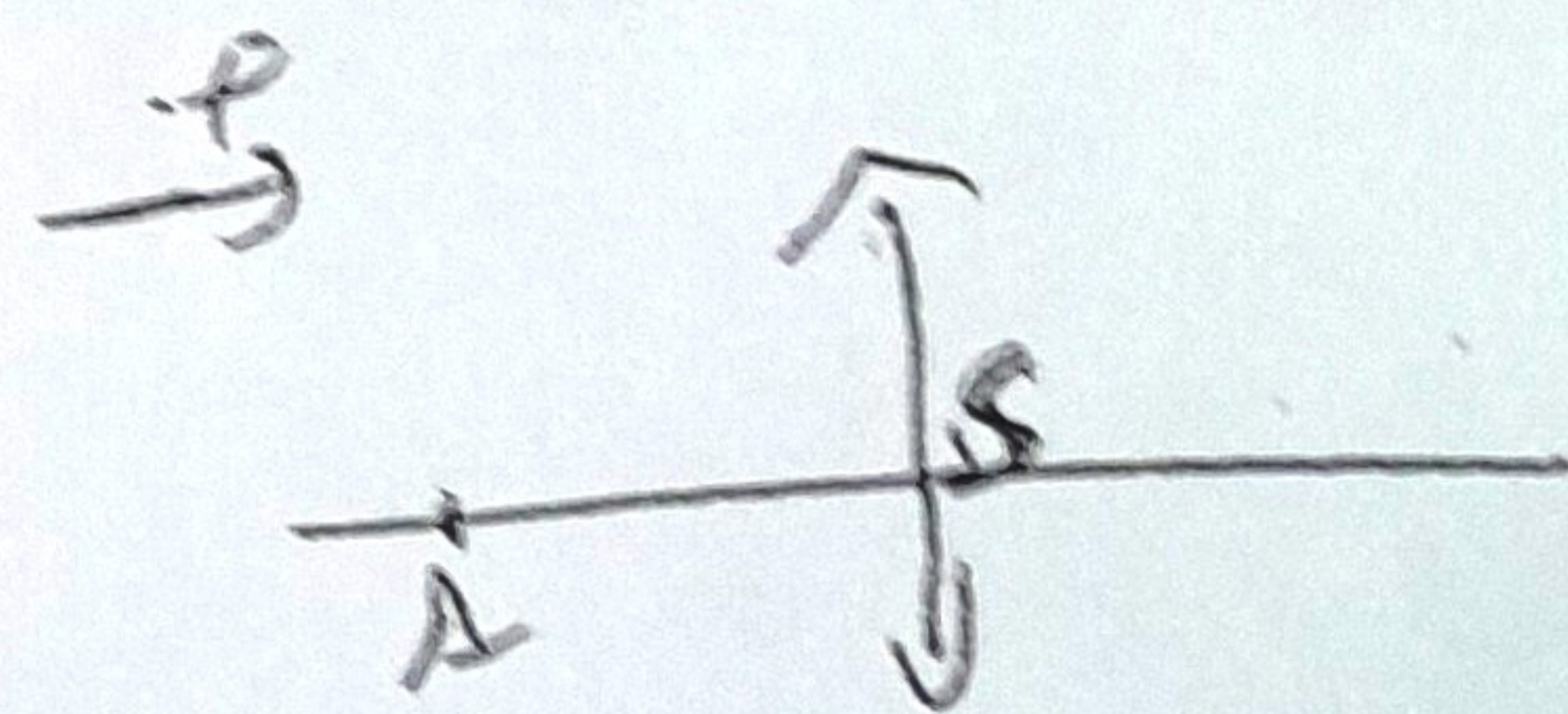
$\gamma = -1$ / on a $\gamma = \frac{\overline{A'B'}}{\overline{AB}} = \frac{\overline{SA'}}{\overline{SA}} = -1$ $\overline{SA'} = ?$ $\overline{SA} = ?$

$\Rightarrow \overline{SA'} = -\overline{SA}$

relation de conjugaison: $\frac{1}{\overline{SA'}} - \frac{1}{\overline{SA}} = \frac{1}{\overline{SF'}} = \frac{1}{\overline{SF}}$

$\Rightarrow -\frac{1}{\overline{SA}} - \frac{1}{\overline{SA}} = +\frac{1}{\overline{SF'}} \Rightarrow -\frac{2}{\overline{SA}} = \frac{1}{\overline{SA}} \Rightarrow \overline{SA} = -2\overline{SF} = -80 \text{ cm}$

et $\overline{SA'} = +80 \text{ cm}$



2/ a) on a $\overline{SA} = -50 \text{ cm}$ $\overline{SA'} = ?$

relation de conjugaison: $\frac{1}{\overline{SA'}} - \frac{1}{\overline{SA}} = \frac{1}{\overline{SF'}} \Rightarrow \frac{1}{\overline{SA'}} = \frac{1}{\overline{SF'}} + \frac{1}{\overline{SA}} = \frac{1}{40} + \frac{1}{-50}$