

Exercice 4.

2) Relat° conjugaison: $\frac{1}{OA'} - \frac{1}{OA} = \frac{1}{OF'}$

$$\overline{OA'} = \frac{\overline{OA} \times \overline{OF'}}{\overline{OA} + \overline{OF'}} = \frac{-16,5 \times 15}{-16,5 + 15} = \frac{170 \text{ mm}}{-17} = -17 \text{ cm}$$

$$\gamma = \frac{\overline{OA'}}{\overline{OA}} = \frac{-170}{-16,5} = -10,3$$

image réelle, renversée, agrandie
($OA' > 0$) ($\gamma < 0$) ($|\gamma| > 1$)

3) $\overline{O_1 A'} + \overline{A' O_2} = \overline{O_1 O_2}$
 $\overline{A' O_2} = \overline{O_1 O_2} - \overline{O_1 A'}$
 $= 180 - 170 = 10 \text{ mm}$
 et $\overline{O_2 A'} = -1 \text{ cm}$

Relat° conjugaison:
 $\overline{O_2 A''} = \frac{\overline{O_2 A'} \times \overline{O_2 F'}}{\overline{O_2 A'} + \overline{O_2 F'}} = \frac{-10 \times 25}{-10 + 25} = \frac{-250}{15} = -16 \text{ mm}$

$$\gamma_2 = \frac{\overline{O_2 A''}}{\overline{O_2 A'}} = \frac{-16}{-10} = 1,6$$

virtuelle, droite, agrandie
($O_2 A'' < 0$) ($p > 0$) ($\gamma > 1$)

4) $\gamma_{\text{mixe}} = \frac{\overline{AB}}{\overline{A'' B''}} = \frac{\overline{AB}}{\overline{A' B'}} \times \frac{\overline{A' B'}}{\overline{A'' B''}} = \gamma_1 \times \gamma_2$
 $= (-10,3) \times (1,6)$
 $= -16,5$

