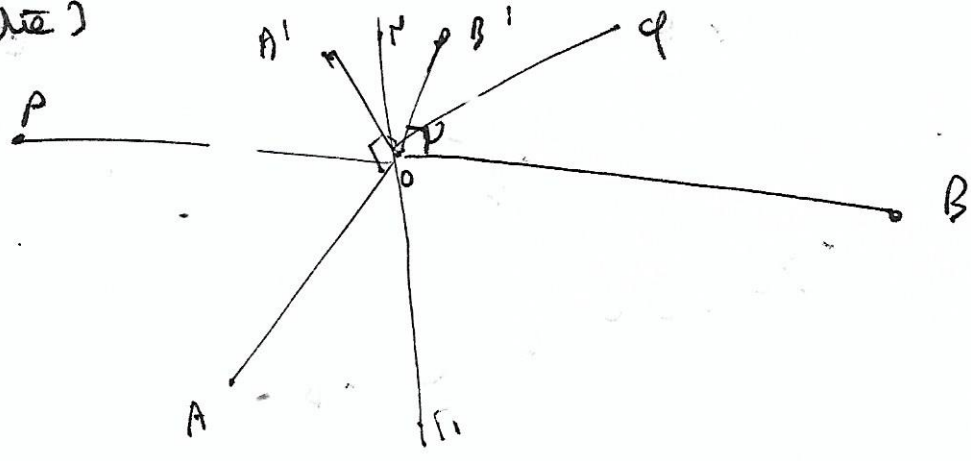


Partie 3

3) b)

①



$$\widehat{B'O A'} + \widehat{A' O A} + \widehat{A O B} + \widehat{B O B'} = 360$$

$$\Leftrightarrow \widehat{B'O A'} = 360 - \widehat{A' O A} - \widehat{A O B} - \widehat{B O B'} = 360 - 90 - 112 - 90$$

$$\Leftrightarrow \widehat{B'O A'} = 68$$

$$\widehat{P O N} = \widehat{P O B} + \widehat{B O B'} + \widehat{B' O N} = \frac{1}{2} \widehat{A O B} + 90 + \frac{1}{2} \widehat{B'O A'}$$

$$\widehat{P O N} = \frac{1}{2} \times 112 + 90 + \frac{1}{2} \times 68 = 56 + 90 + 34 = 180$$

$\widehat{P O N}$  est un angle plat, donc les points P, O et N sont alignés.

$$\widehat{P O Q} = \widehat{P O B'} + \widehat{B' O Q}$$

$$= \frac{1}{2} \widehat{A O B'} + \widehat{B' O Q}$$

$$= \frac{1}{2} \widehat{A O B'} + \widehat{A' O Q} - \widehat{A' O B'}$$

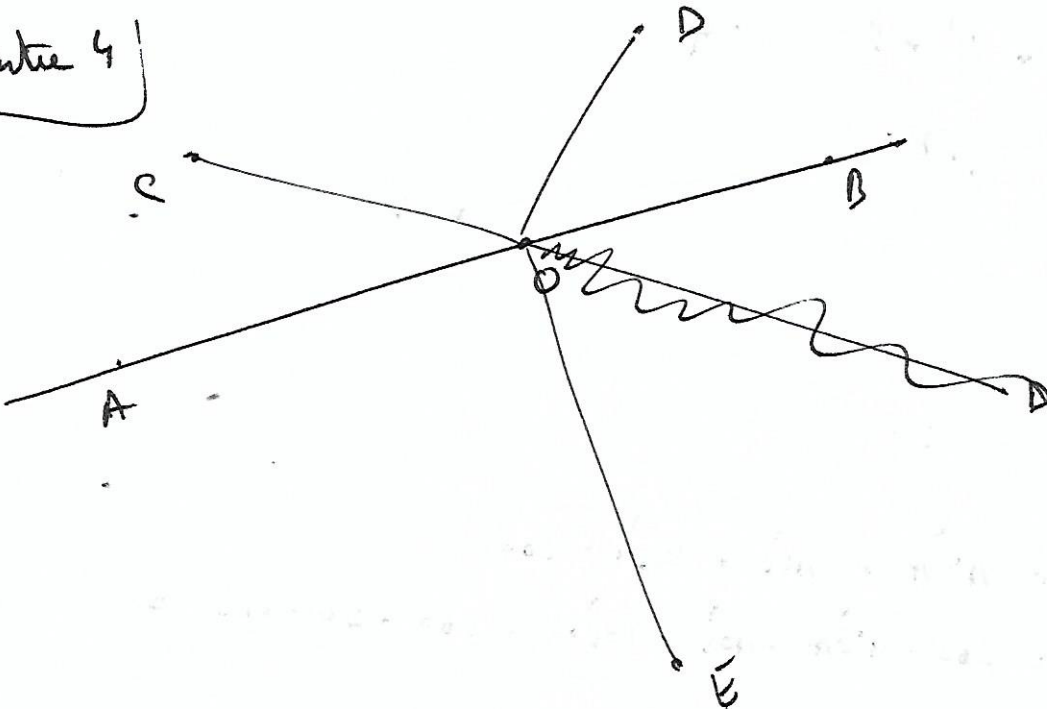
$$= \frac{1}{2} \widehat{A O B'} + \frac{1}{2} \widehat{A' O B} - \widehat{A' O B'}$$

$$= \frac{1}{2} (90 + 68) + \frac{1}{2} (90 + 68) - 90$$

$$= \underline{\underline{68}}$$

Partie 4

②



a)

$$\widehat{AOC} + \widehat{COD} + \widehat{DOB} = 180$$

$$\Leftrightarrow \widehat{COD} + \widehat{AOC} + \widehat{DOB} = 180$$

$\widehat{AOC}$  et  $\widehat{DOB}$  sont supplémentaires, donc  $\widehat{AOE} + \widehat{DOB} = 90$

$$\text{De } \widehat{COD} + 90 = 180 \Leftrightarrow \widehat{COD} = 90$$

Donc OC et OD sont  $\perp$ .

b)

$$\widehat{EOD} = \widehat{EOB} + \widehat{BOD} = 90 + \widehat{BOD} = 90 + 90 - \widehat{AOC} = 180 - \widehat{AOC}$$

$$\text{Donc } \underline{\underline{\widehat{EOD} + \widehat{AOC} = 180}}$$

$$\widehat{EOC} = \widehat{EOA} + \widehat{AOC} = 90 + \widehat{AOC} = 90 + 90 - \widehat{BOD} = 180 - \widehat{BOD}$$

$$\text{Donc } \underline{\underline{\widehat{EOC} + \widehat{BOD} = 180}}$$

c)

$$\widehat{BOC} + \widehat{DOE} = \widehat{BOD} + \widehat{DOC} + \widehat{DOC} + \widehat{COA} + \widehat{AOE}$$

$$= \widehat{BOD} + \widehat{CA} + \widehat{AOE}$$

$$= 90 + 90$$

$$= 180$$

Donc  $\widehat{BOC}$  et  $\widehat{DOE}$  sont supplémentaires