

Trigonométrie

Série 1

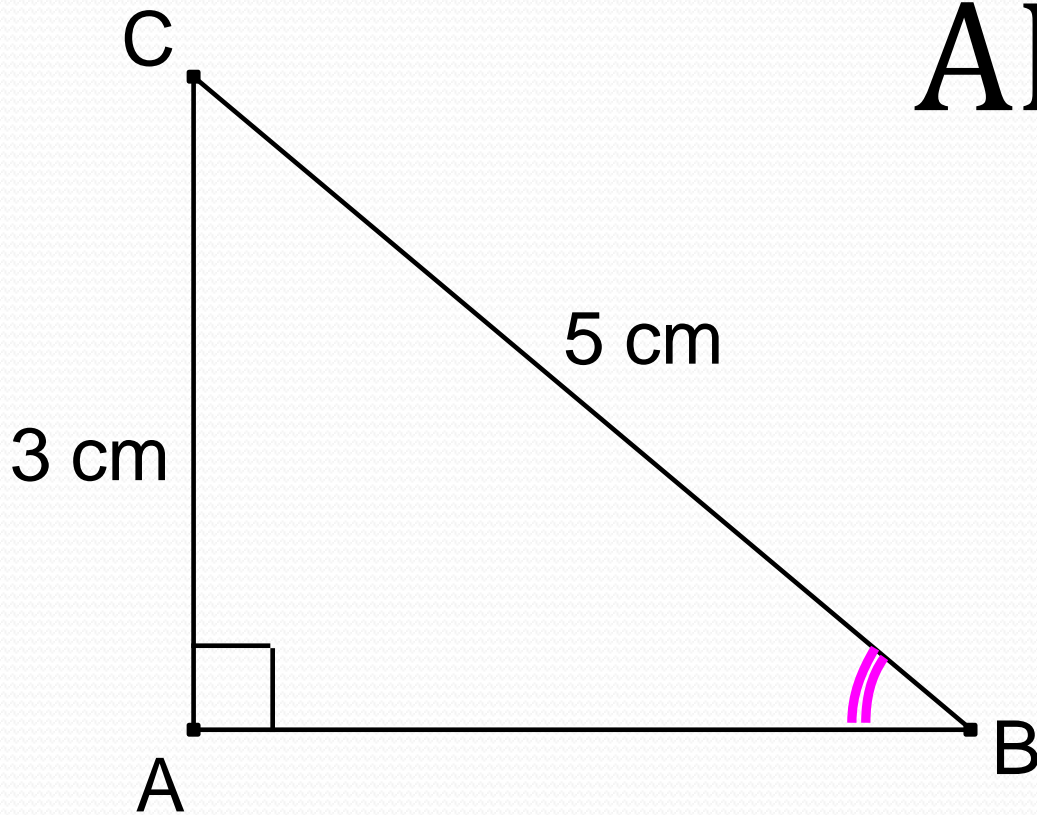
Activités mentales et automatismes en classe de première
IREM de Clermont-Ferrand

Sinus, cosinus et tangente d'un angle aigu

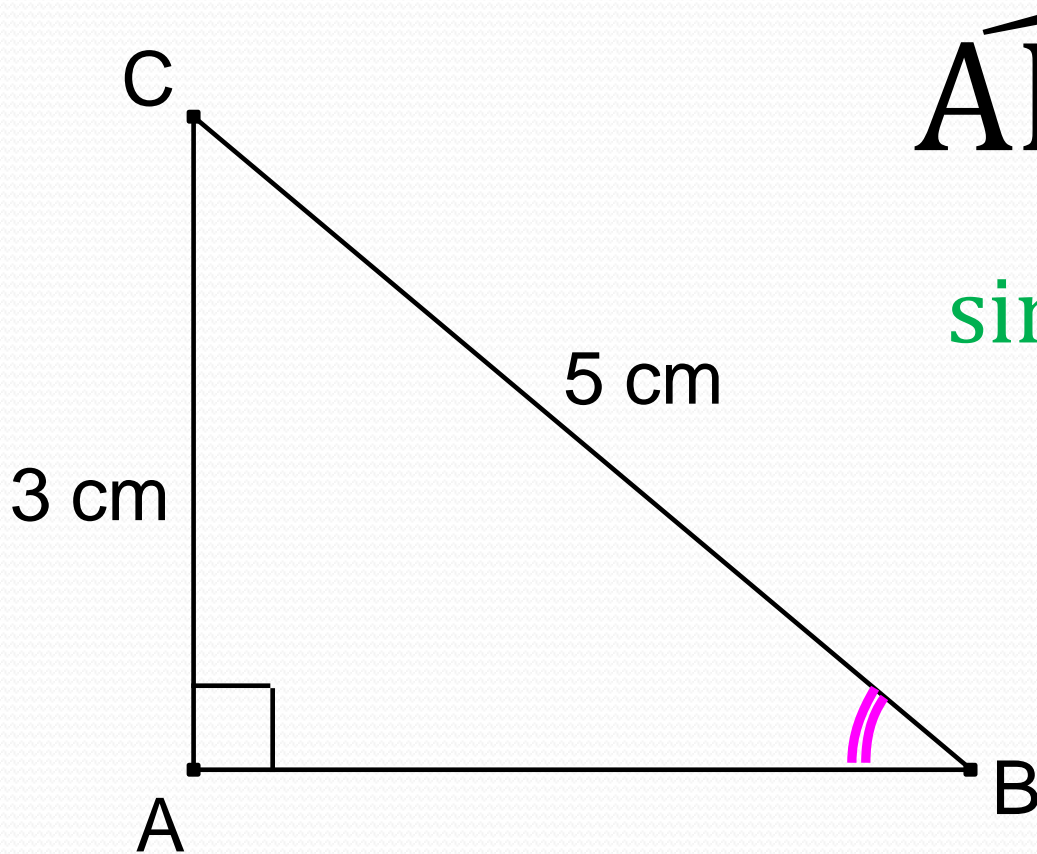
Faut-il utiliser le cosinus, le sinus ou la tangente pour déterminer une mesure de l'angle nommé ?

Question 0

\widehat{ABC} ?



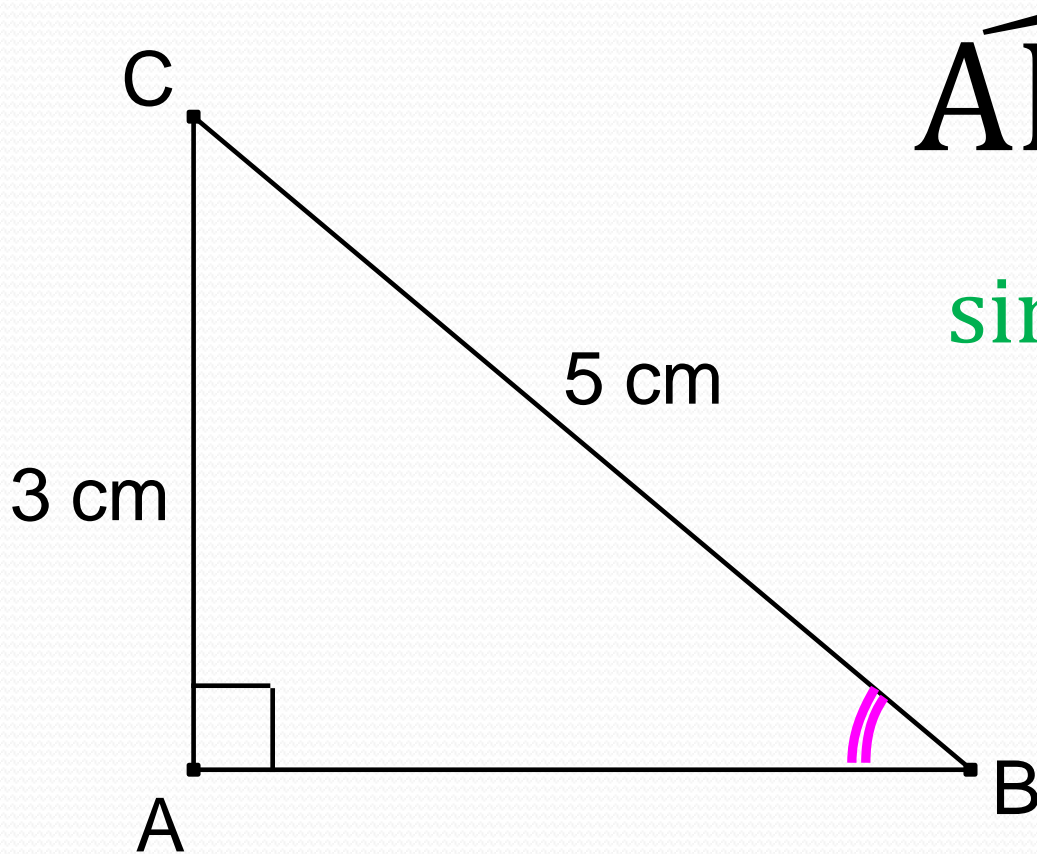
Question 0



\widehat{ABC} ?

$$\sin(\widehat{ABC}) = \frac{AC}{BC} = \frac{3}{5}$$

Question 0

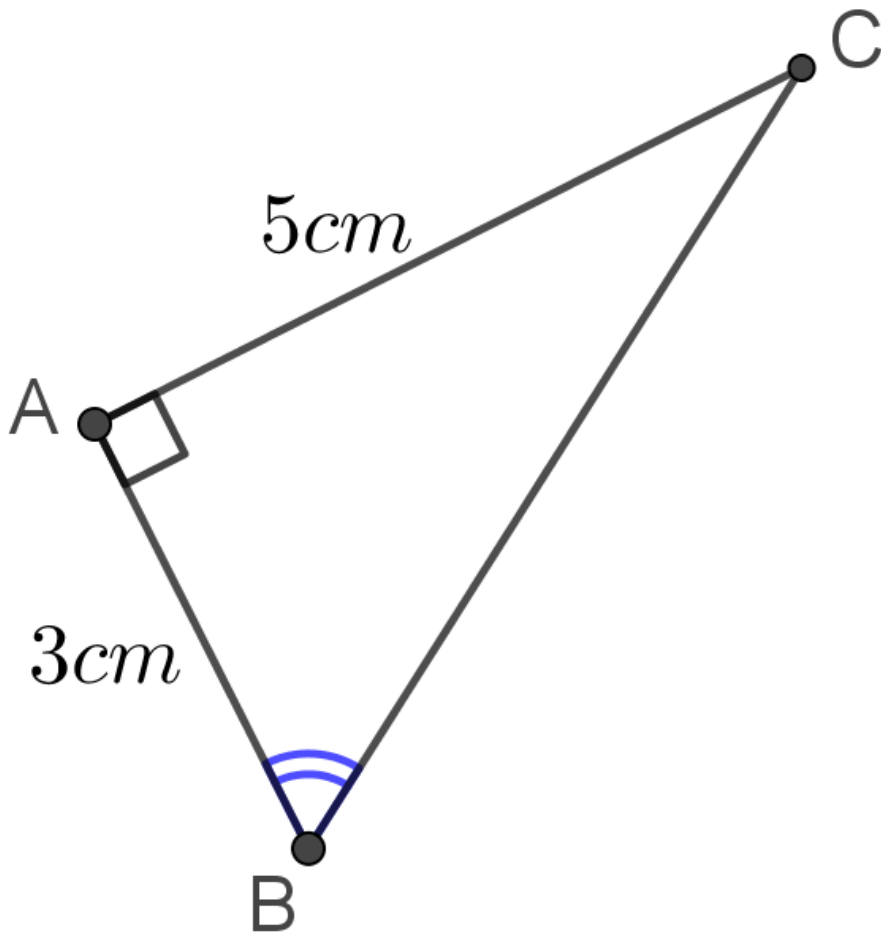


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$$\sin(\widehat{ABC}) = \frac{AC}{BC} = \frac{3}{5}$$

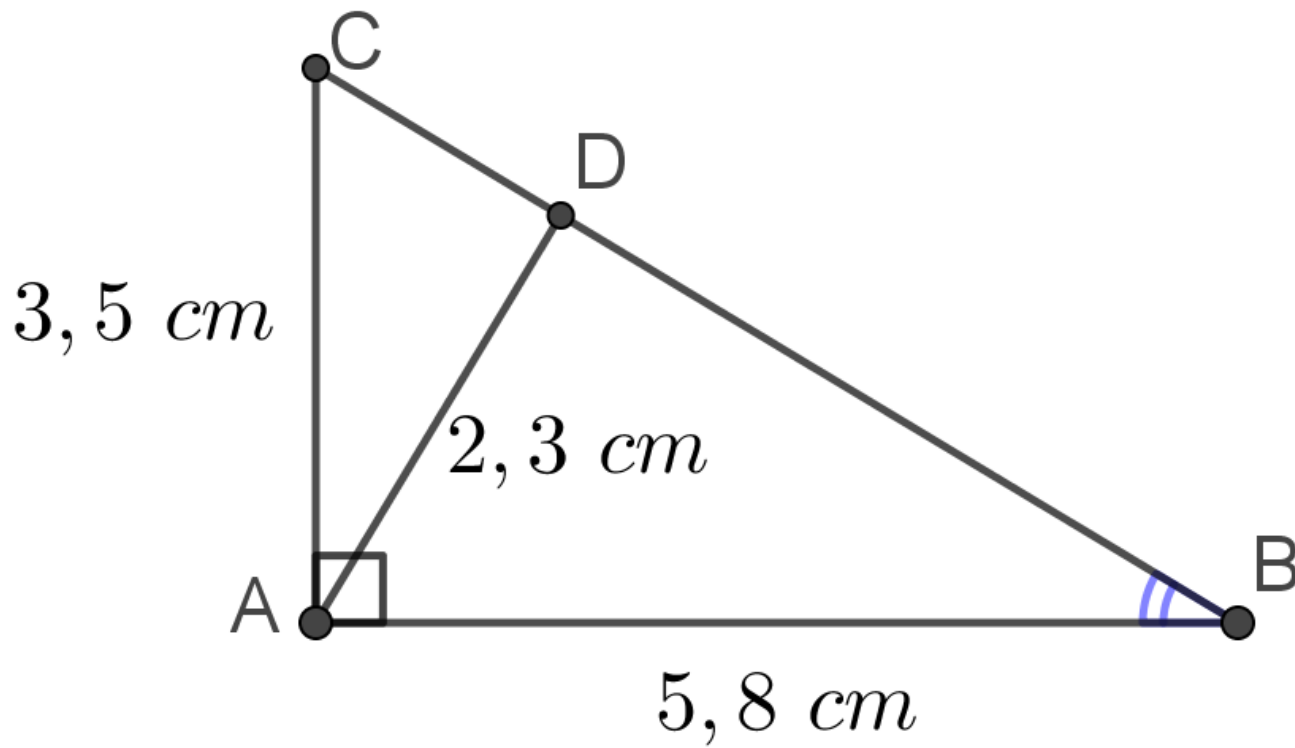
Sinus

Question 1



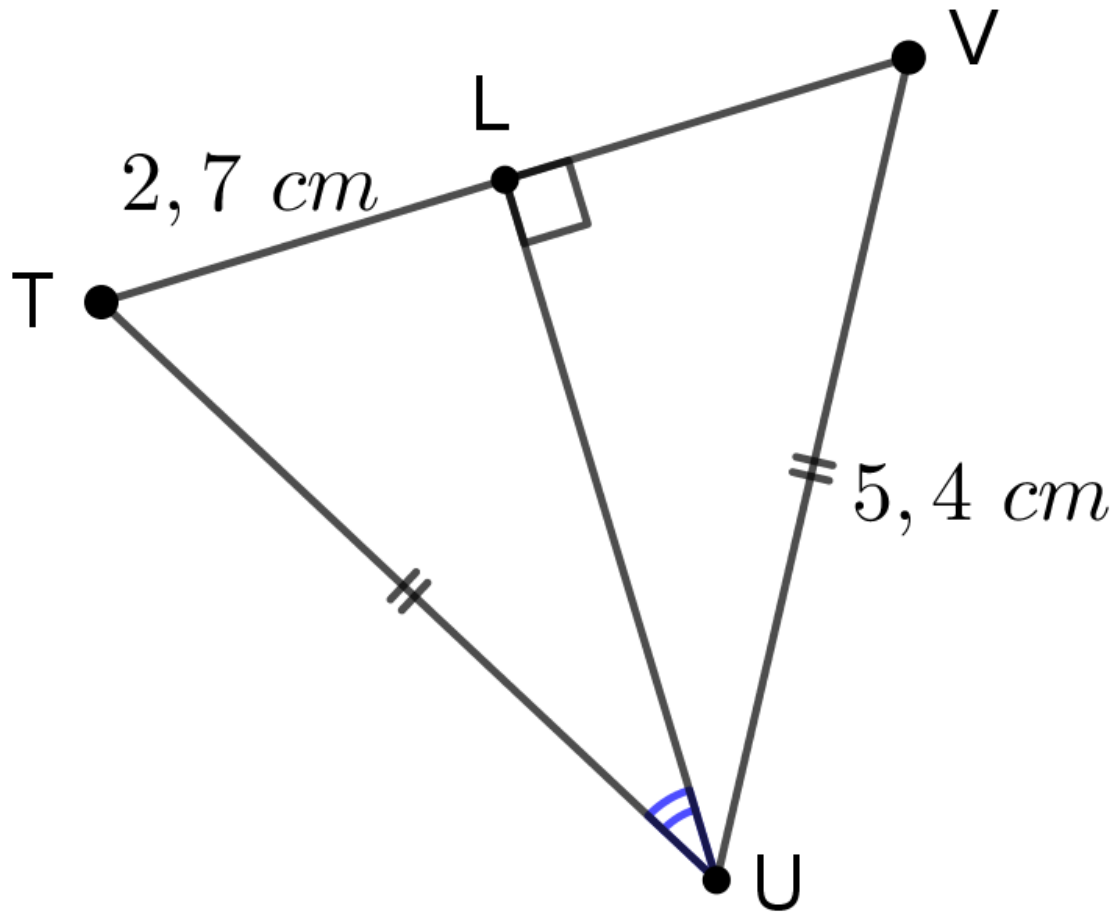
\widehat{ABC}

Question 2



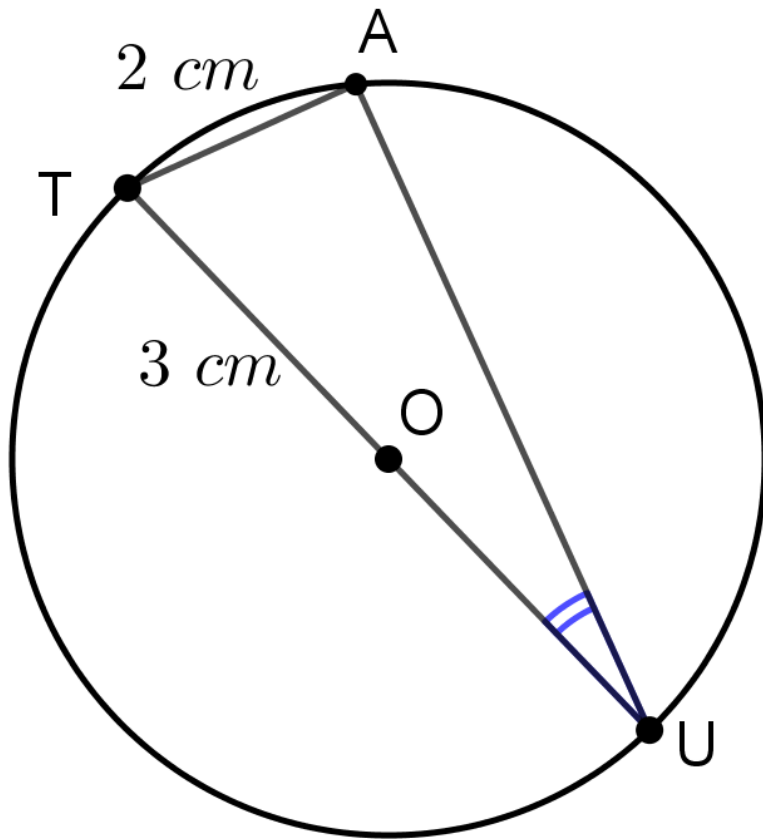
\widehat{ABD}

Question 3



\widehat{TUL}

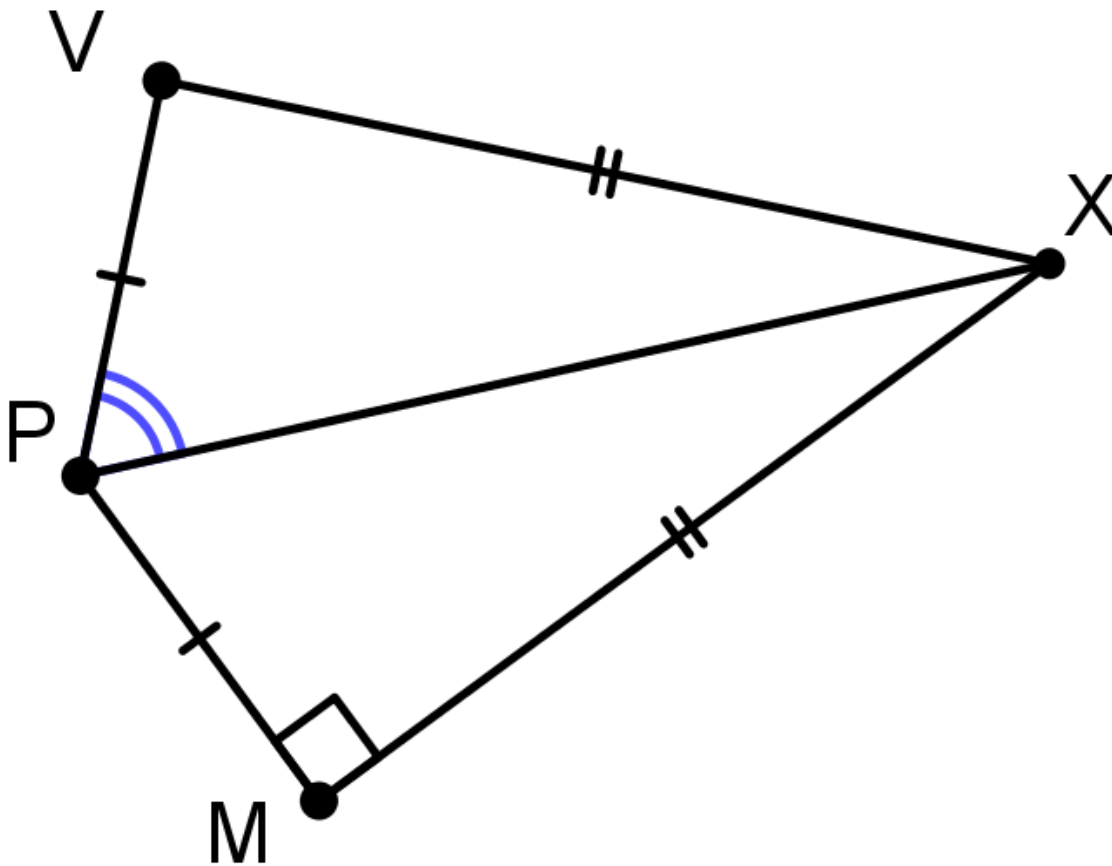
Question 4



\widehat{TUA}

[TU] est un diamètre
du cercle :
 $TO = 3 \text{ cm}$ et $AT = 2 \text{ cm}$.

Question 5

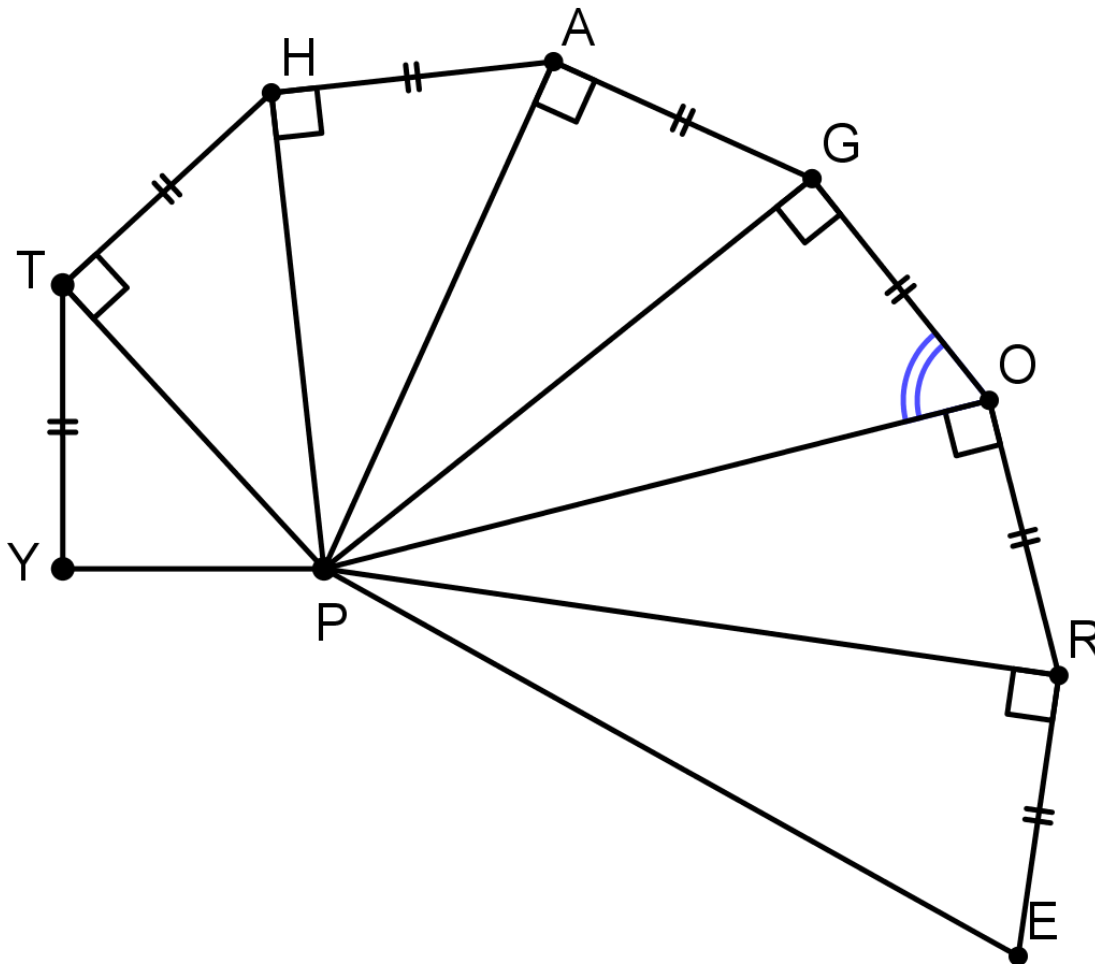


\widehat{VPX}

$PM = 4 \text{ cm}$
et $PX = 9 \text{ cm}$

Question 6

\widehat{POG}

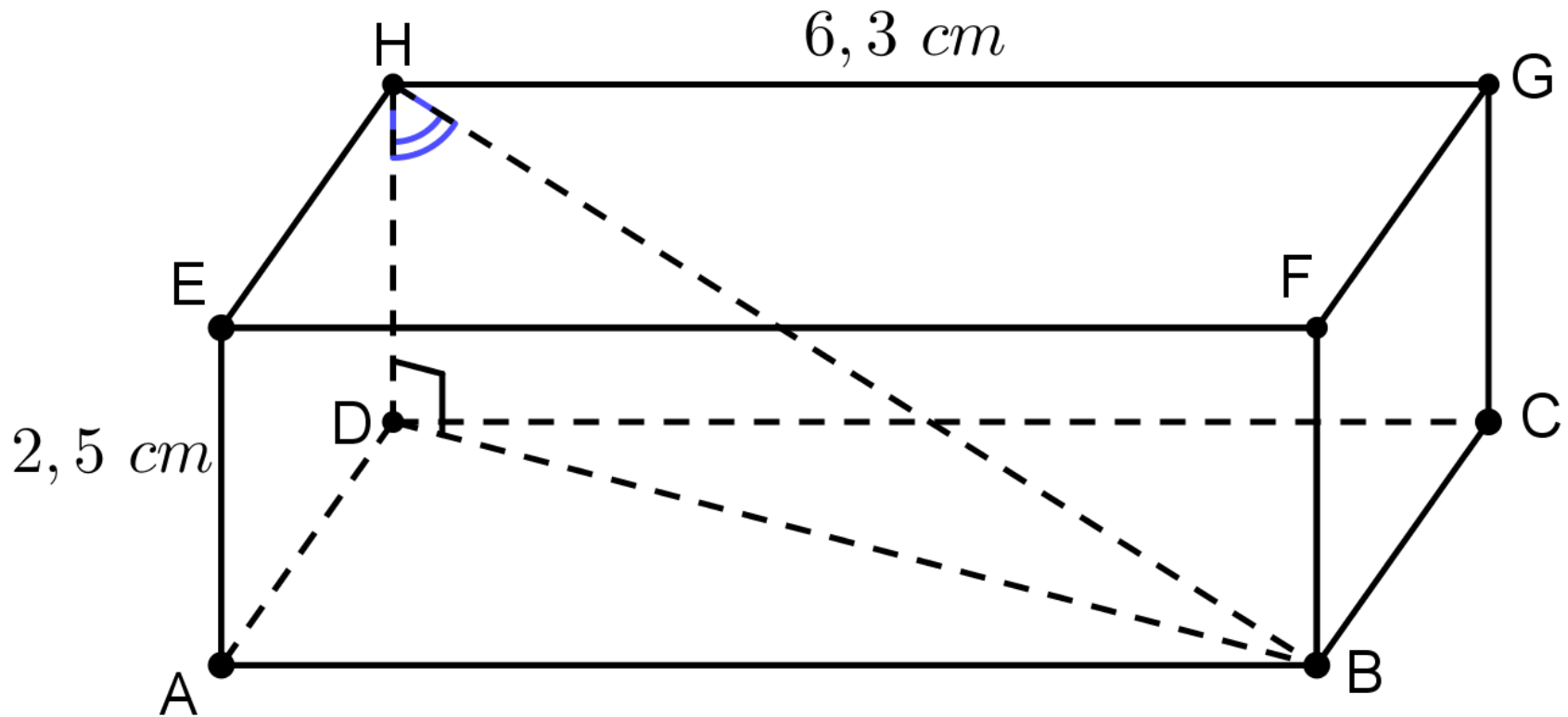


$$PO = 6 \text{ cm}$$

$$TY = 2,5 \text{ cm}$$

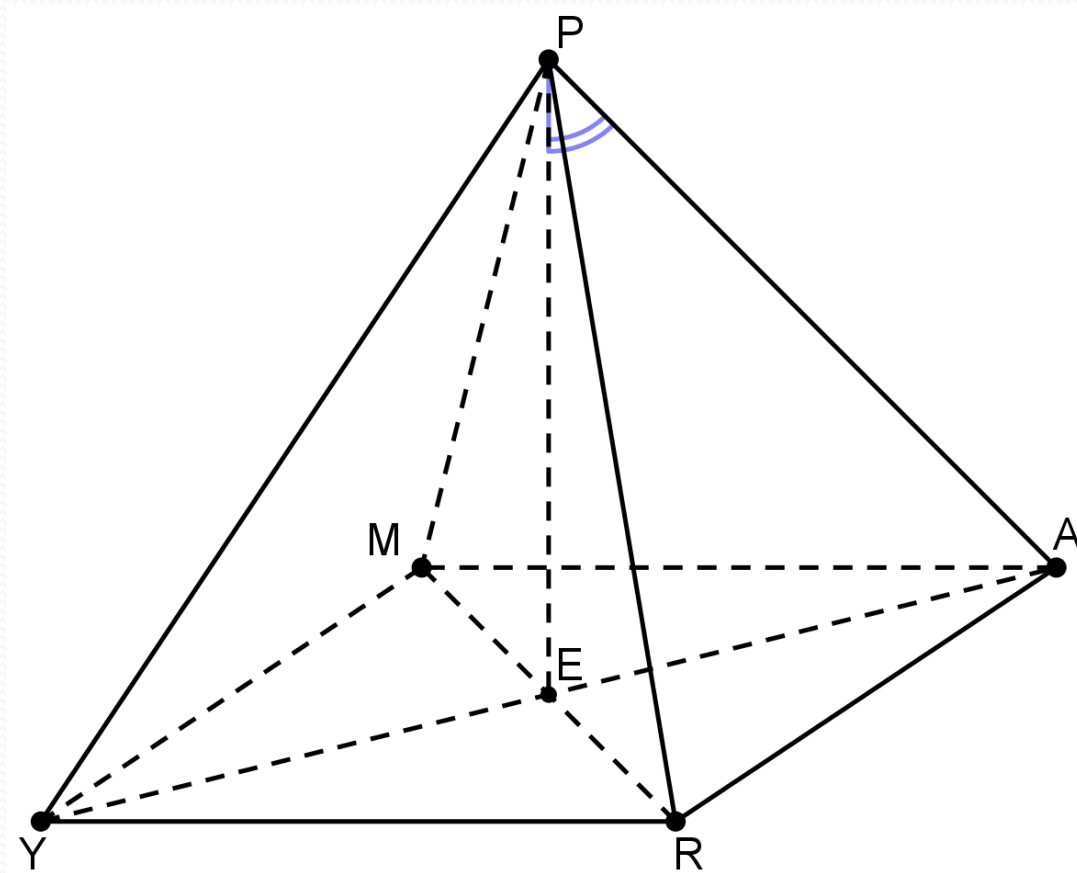
Question 7

\widehat{DHB}



$ABCDEFGH$ est un pavé droit et $HB = 7\text{ cm}$

Question 8



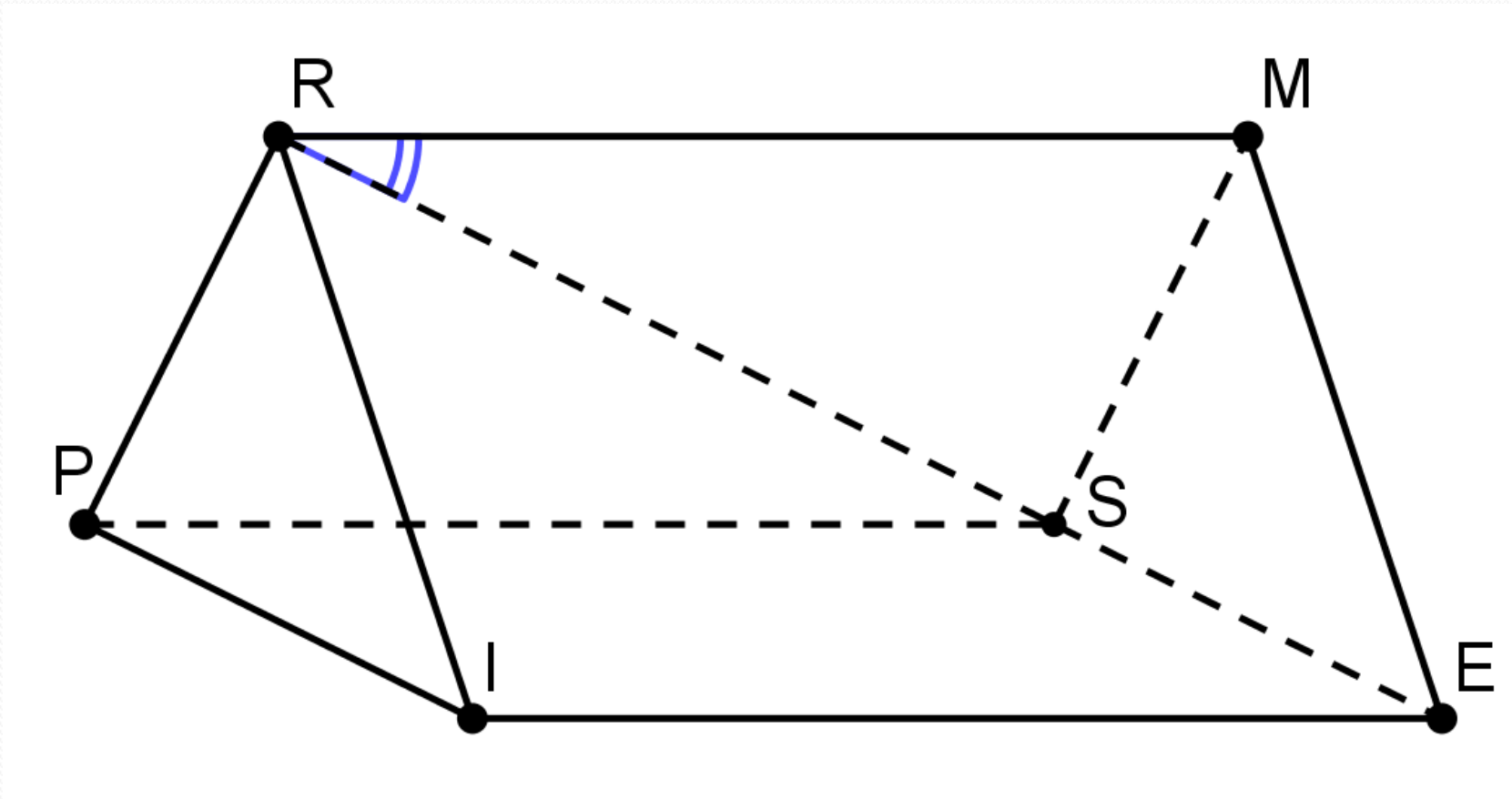
\widehat{EPA}

PYRAM est une
pyramide régulière à
base carrée:

$PA = 7 \text{ cm}$
et $YA = 5,2 \text{ cm}$

Question 9

\widehat{MRS}

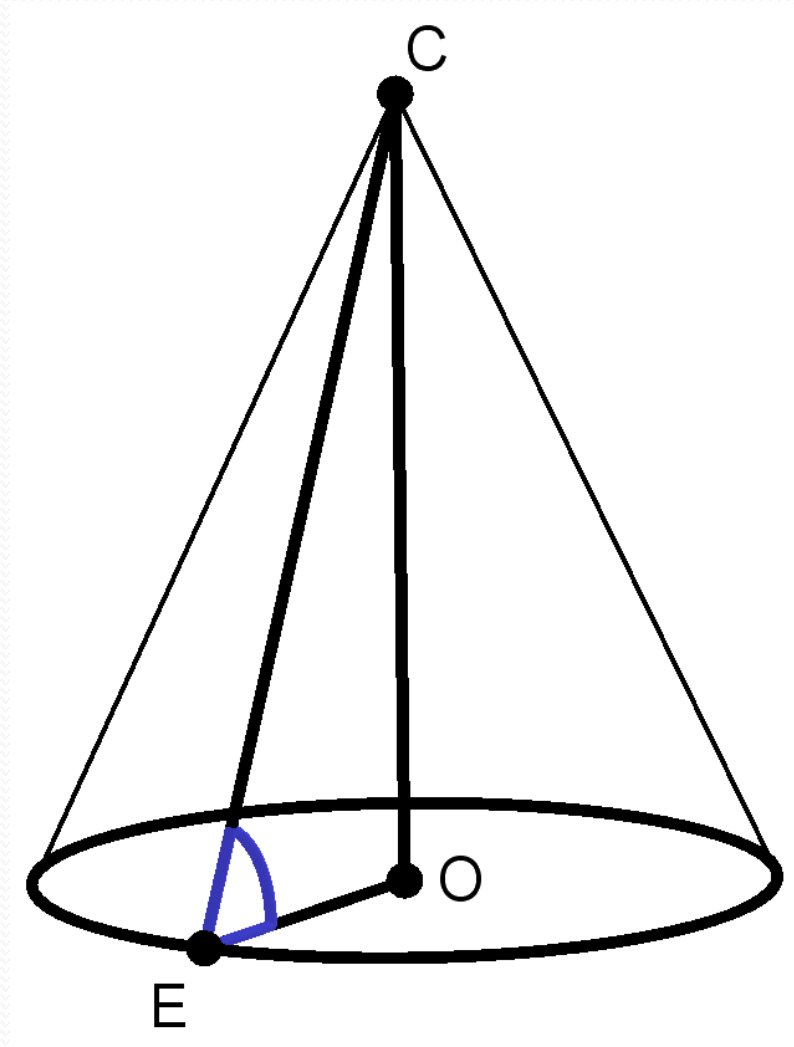


PRISME est un prisme droit : $IE = 7$ cm et $RS = 8$ cm

Question 10

\widehat{OEC}

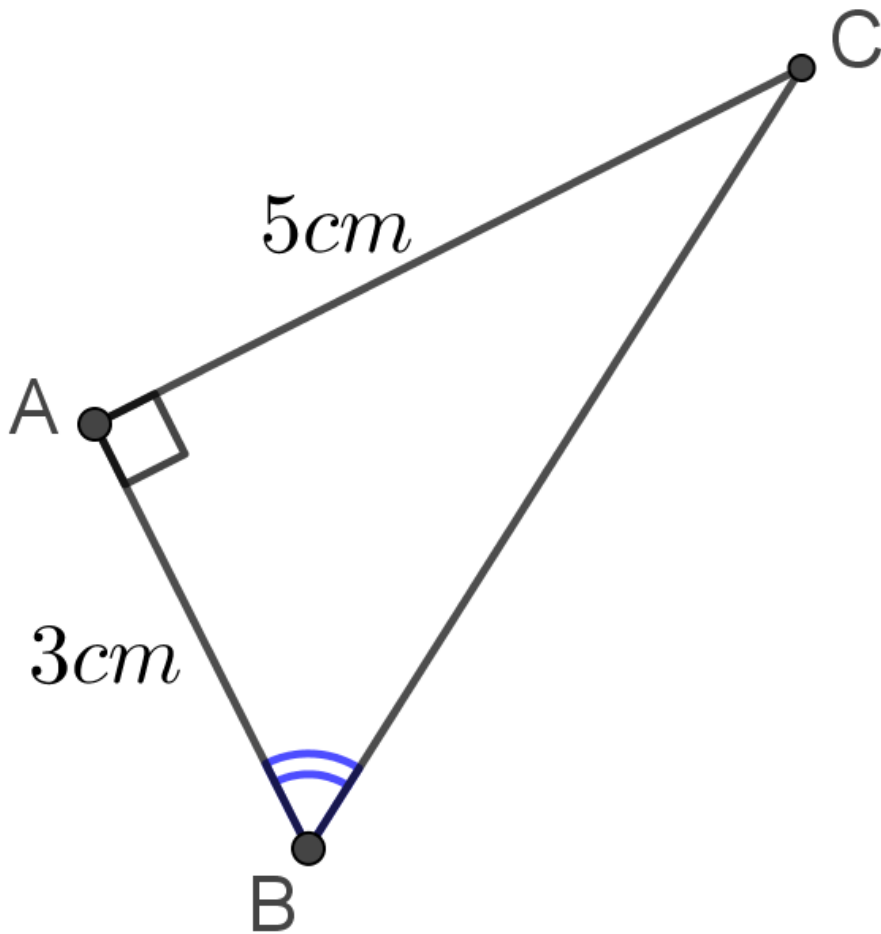
Cône de révolution de
rayon 3 cm et de
génératrice de 10 cm.



Correction

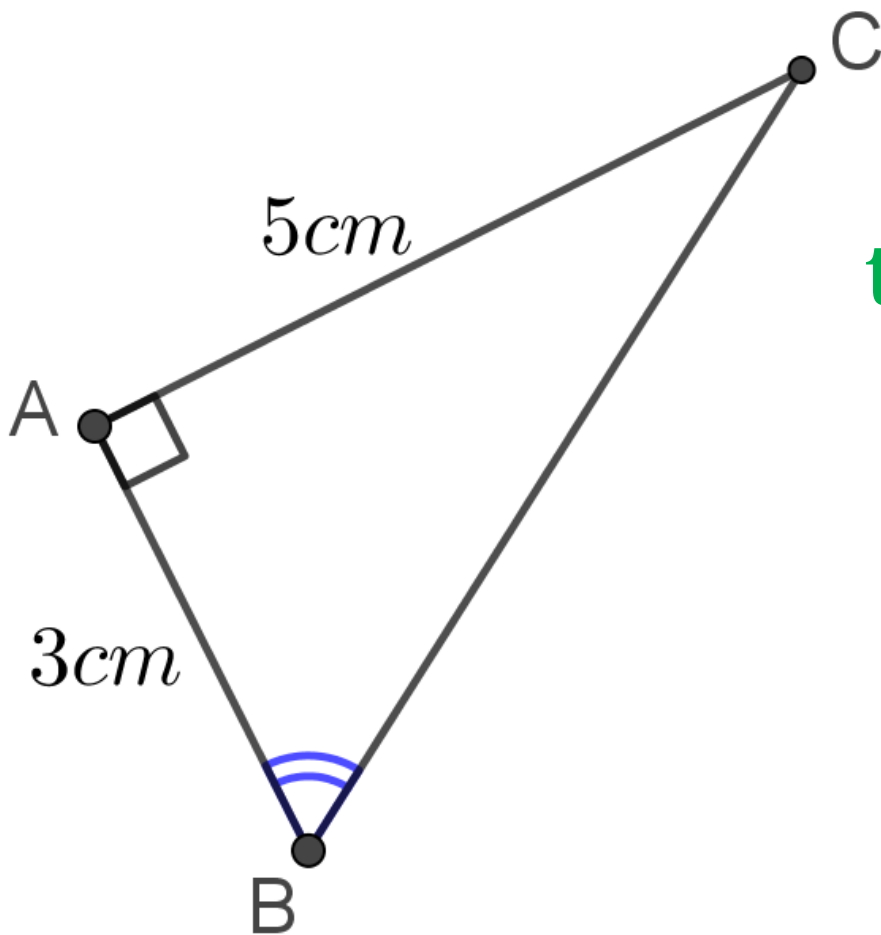
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Question 1



\widehat{ABC} ?

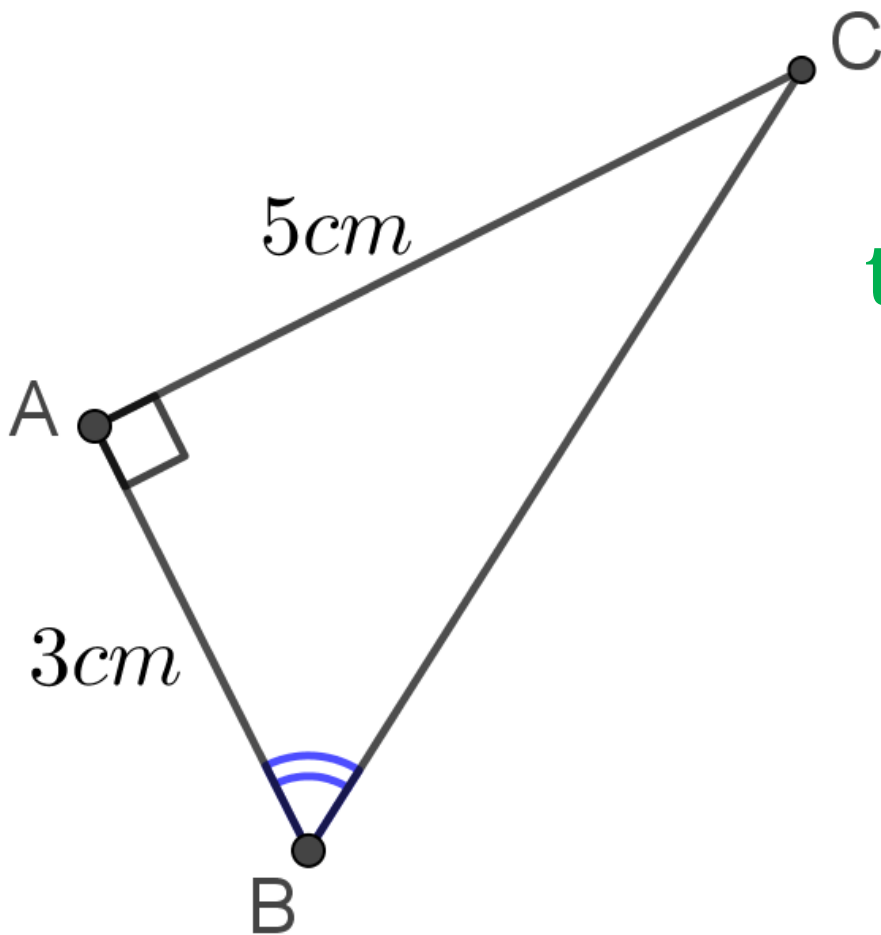
Question 1



\widehat{ABC} ?

$$\tan(\widehat{ABC}) = \frac{AC}{AB} = \frac{5}{3}$$

Question 1

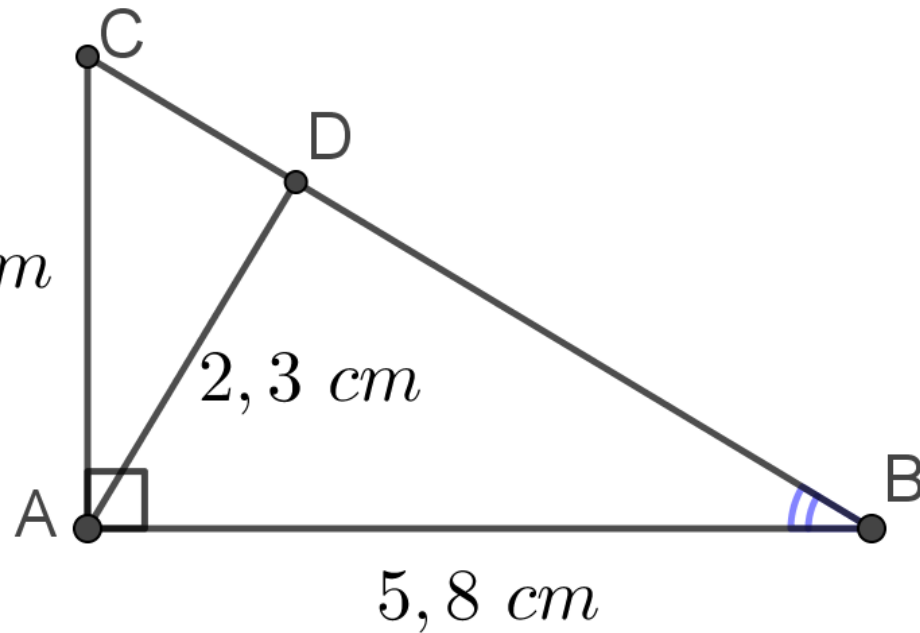


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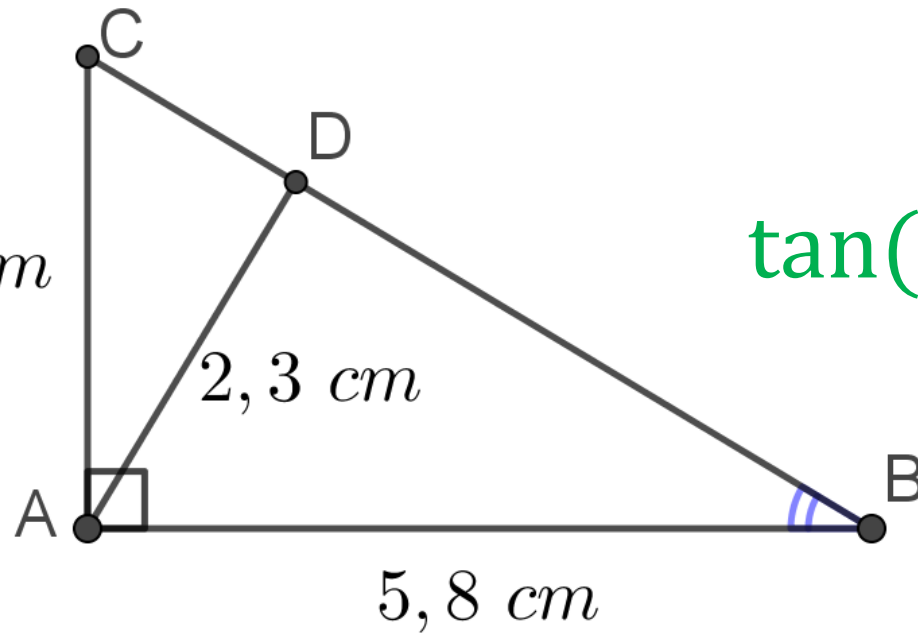
Tangente

Question 2



\widehat{ABD} ?

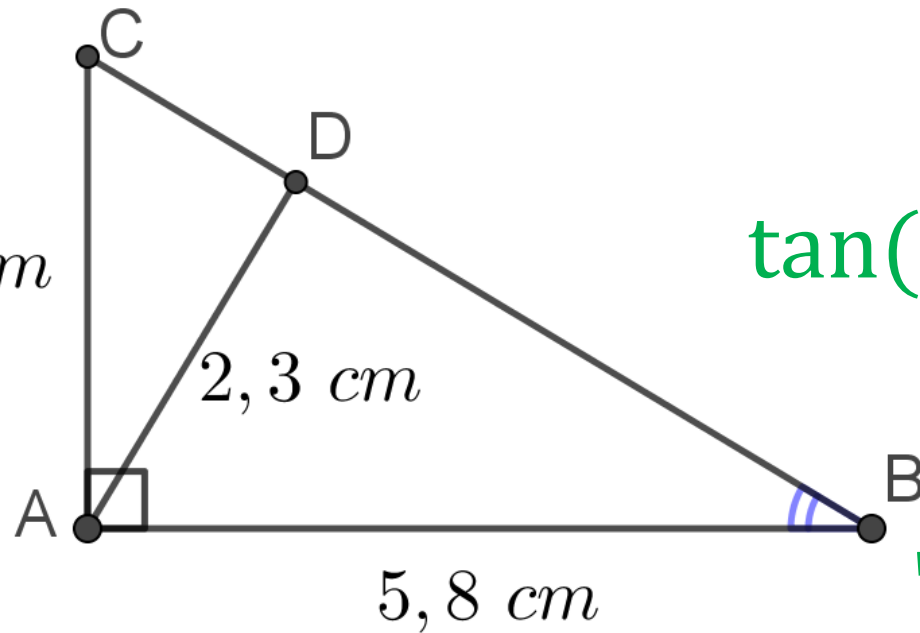
Question 2



\widehat{ABD} ?

$$\tan(\widehat{ABD}) = \frac{AC}{AB} = \frac{3,5}{5,8}$$

Question 2

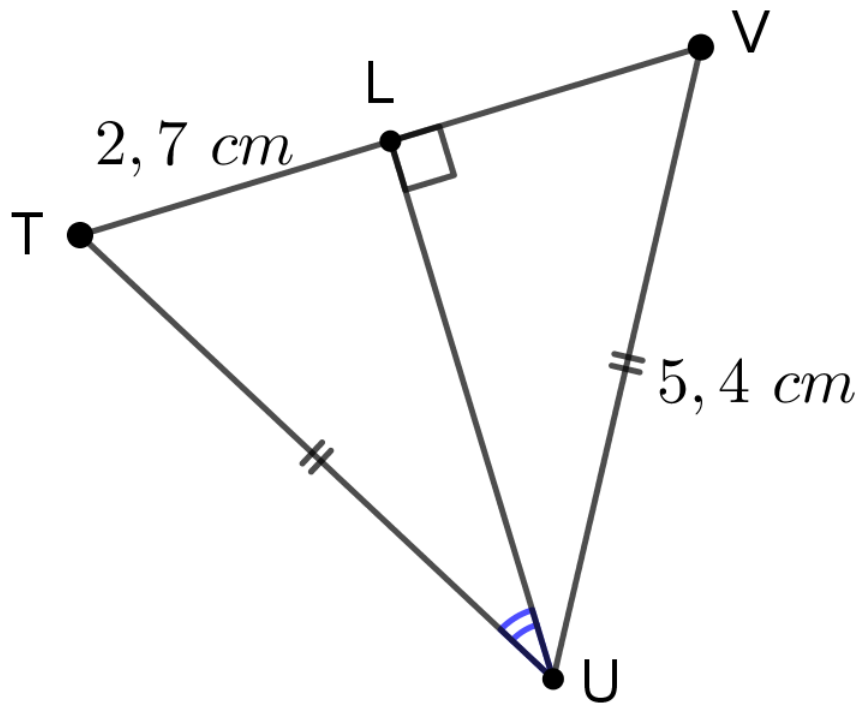


\widehat{ABD} ?

$$\tan(\widehat{ABD}) = \frac{AC}{AB} = \frac{3,5}{5,8}$$

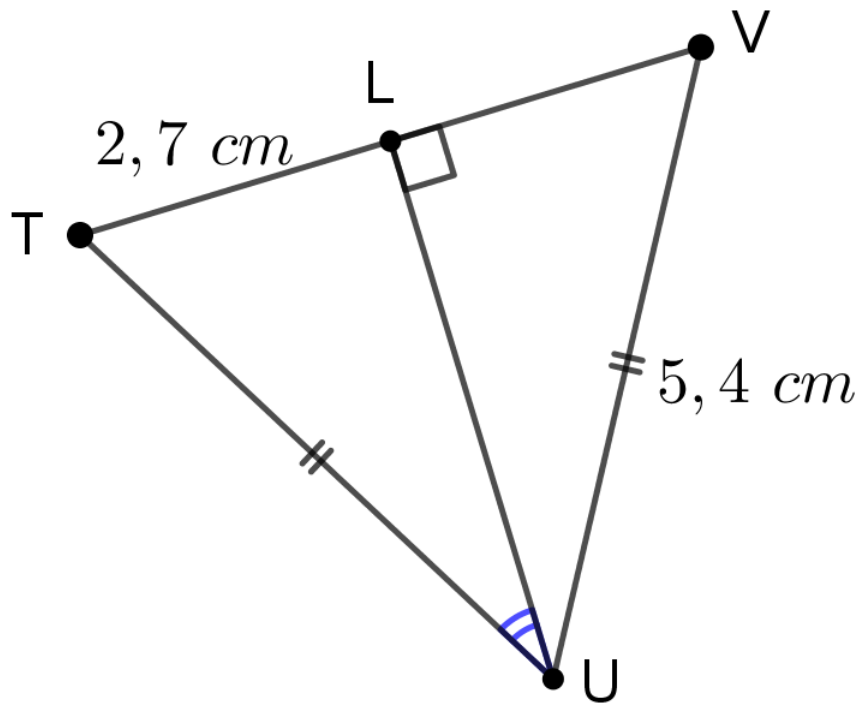
Tangente

Question 3



$\widehat{TUL} ?$

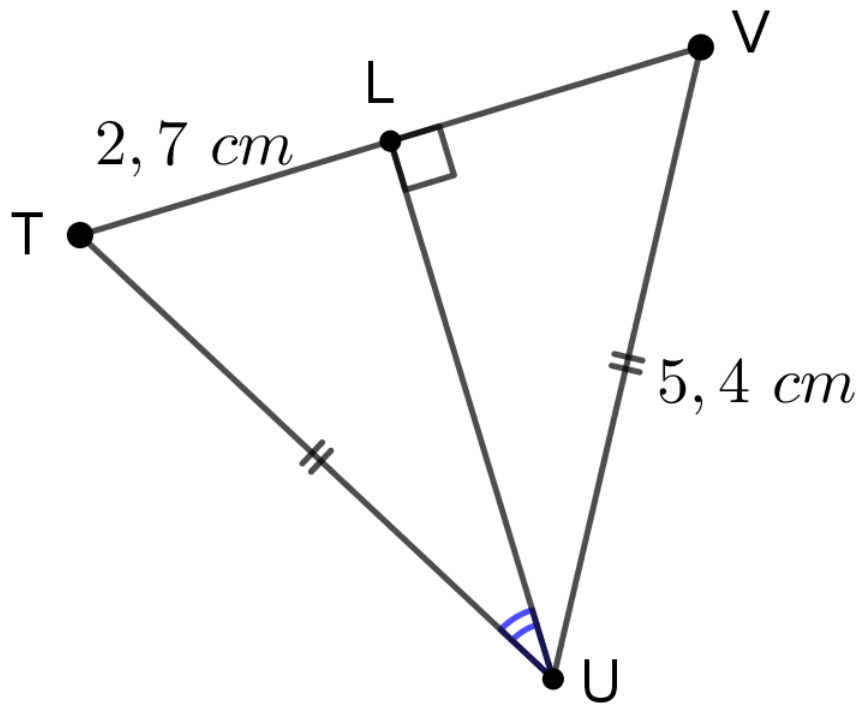
Question 3



\widehat{TUL} ?

$$\sin(\widehat{TUL}) = \frac{TL}{TU} = \frac{2,7}{5,4}$$

Question 3

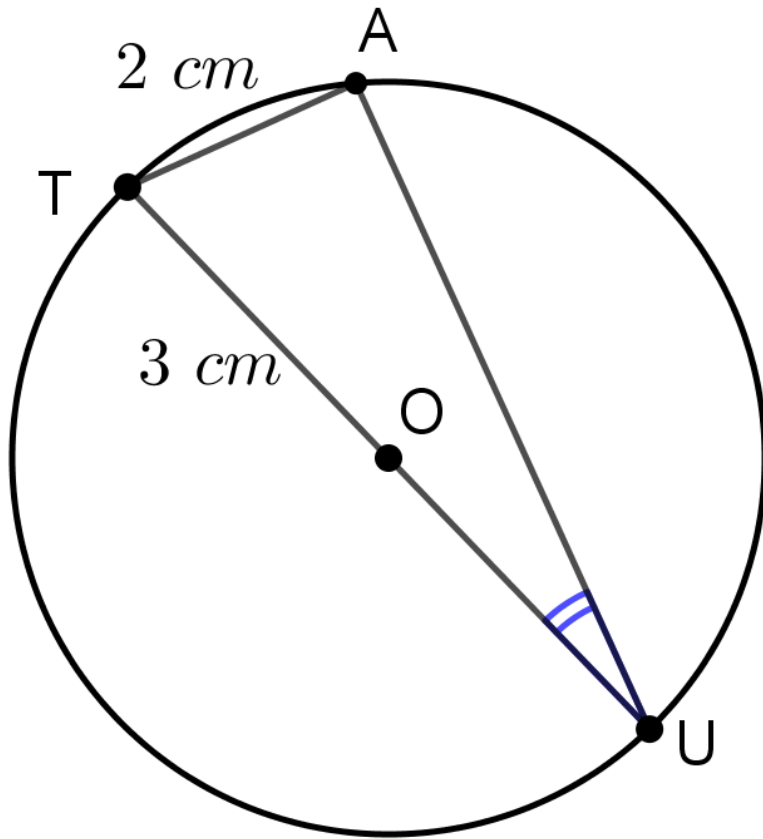


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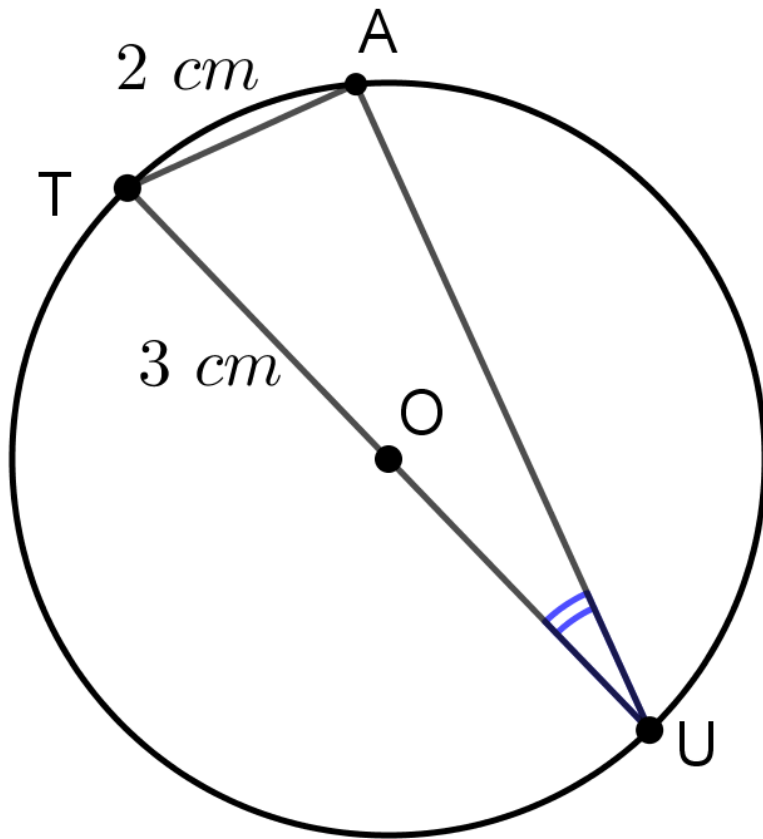
Sinus

Question 4



\widehat{TUA} ?

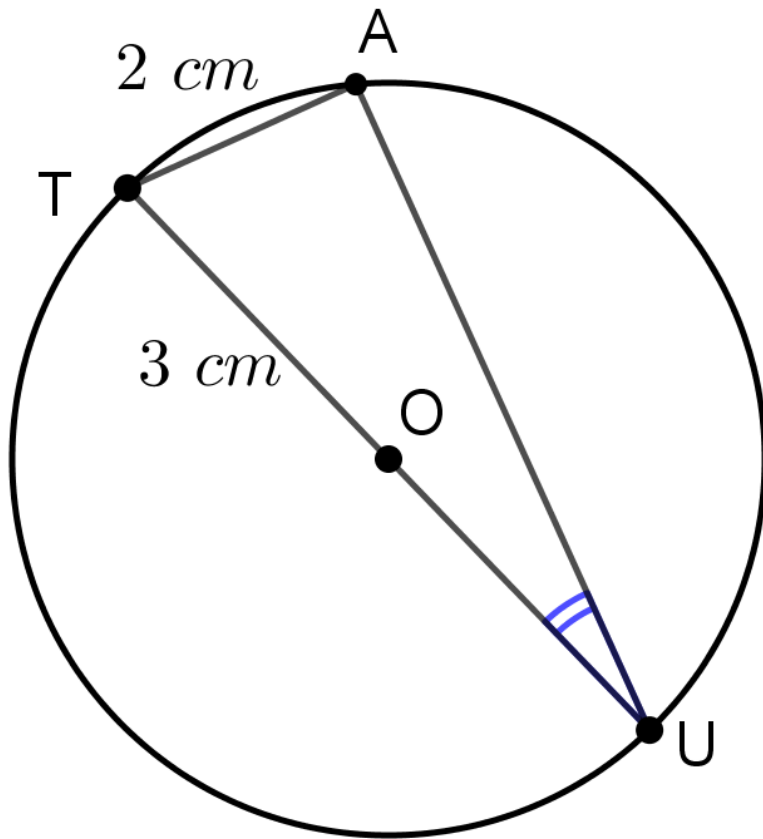
Question 4



\widehat{TUA} ?

$$\sin(\widehat{TUA}) = \frac{TA}{TU} = \frac{2}{6}$$

Question 4



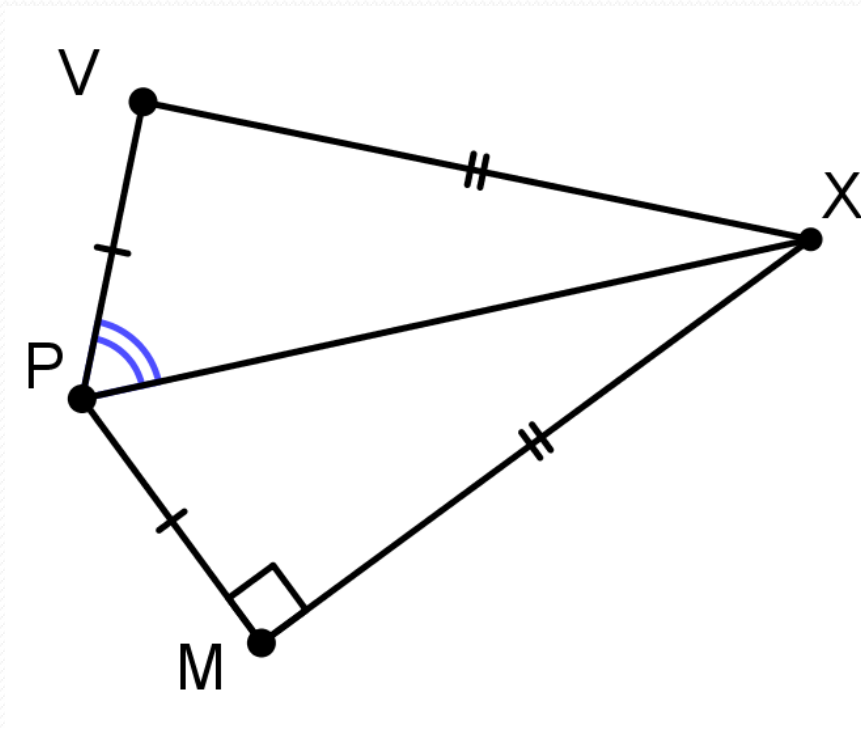
\widehat{TUA} ?

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Sinus

Question 5

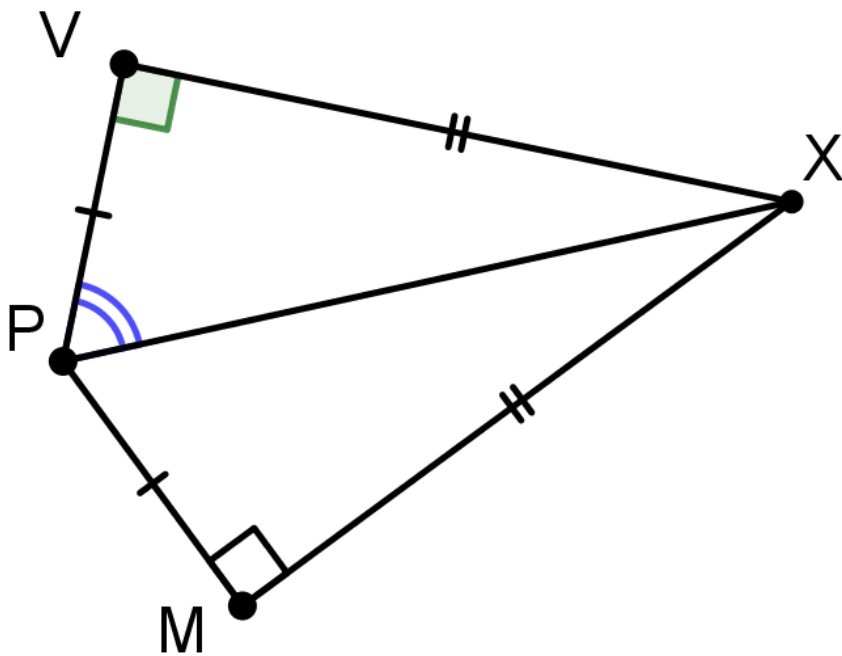
\widehat{VPX} ?



Question 5

\widehat{VPX} ?

Les triangles VPX et PXM sont superposables, donc VPX est rectangle en V.

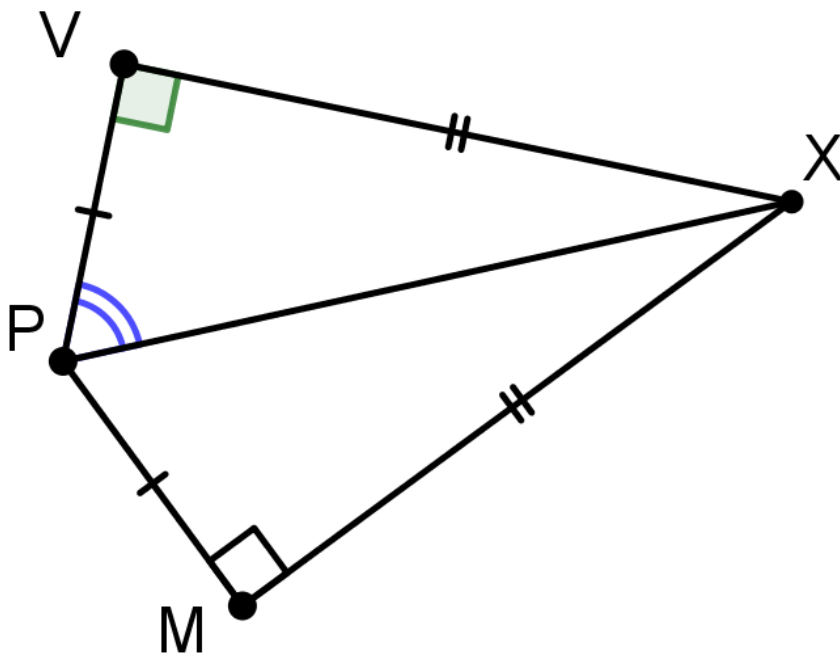


Question 5

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$$\cos(\widehat{VPX}) = \frac{PV}{PX} = \frac{4}{9}$$



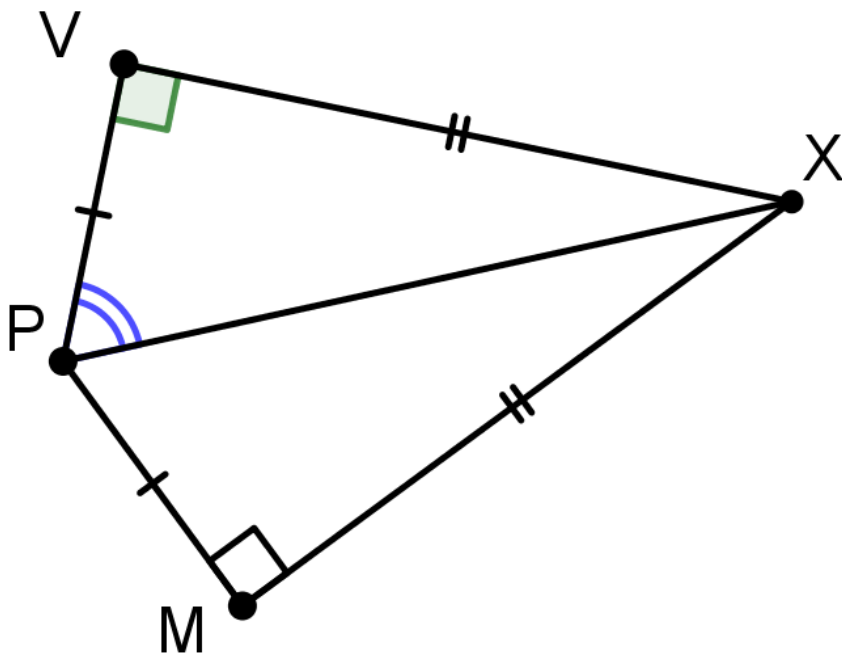
Question 5

\widehat{VPX} ?

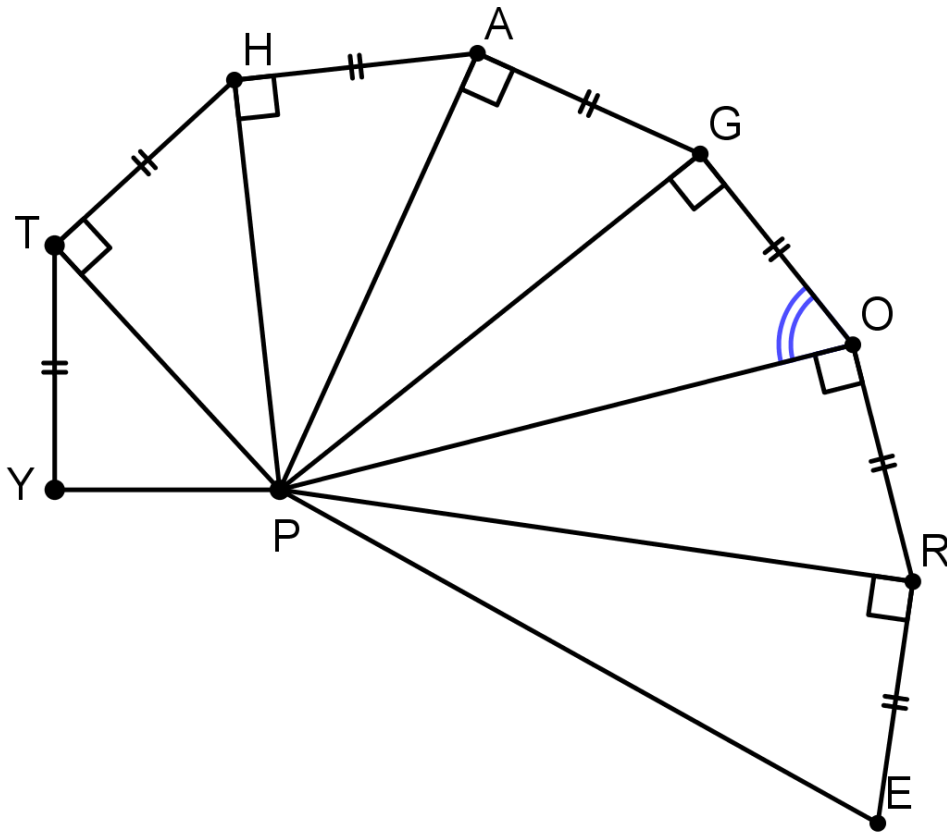
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Cosinus



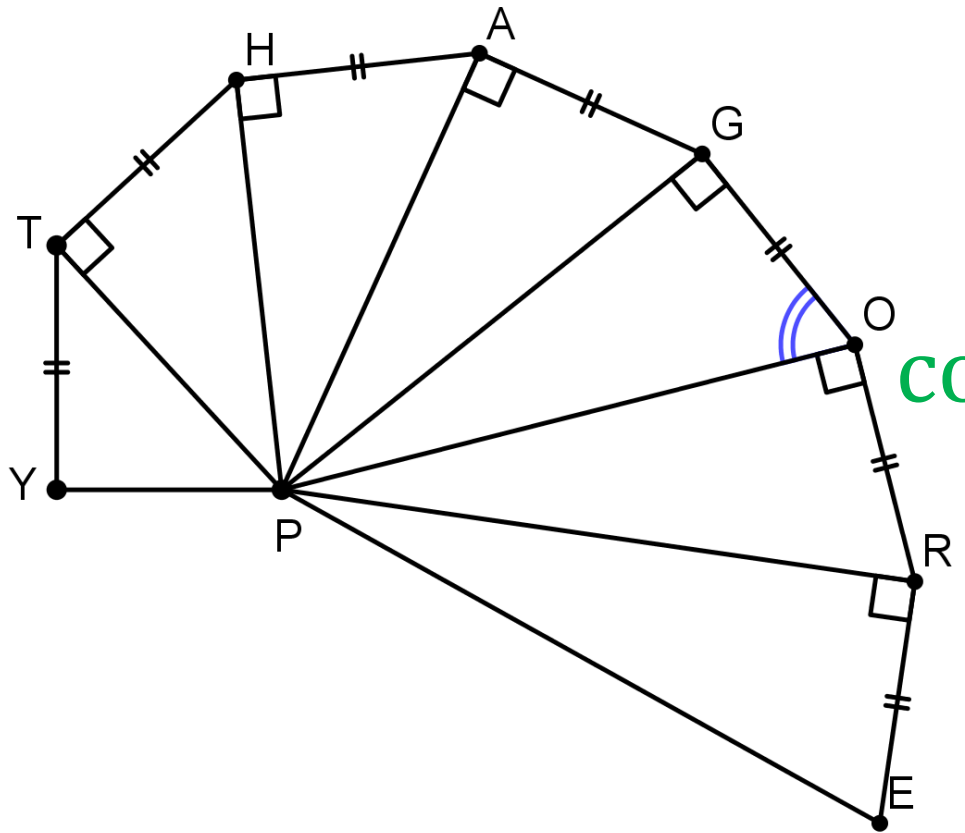
Question 6



\widehat{POG} ?

$$PO = 6 ; TY = 2,5$$

Question 6

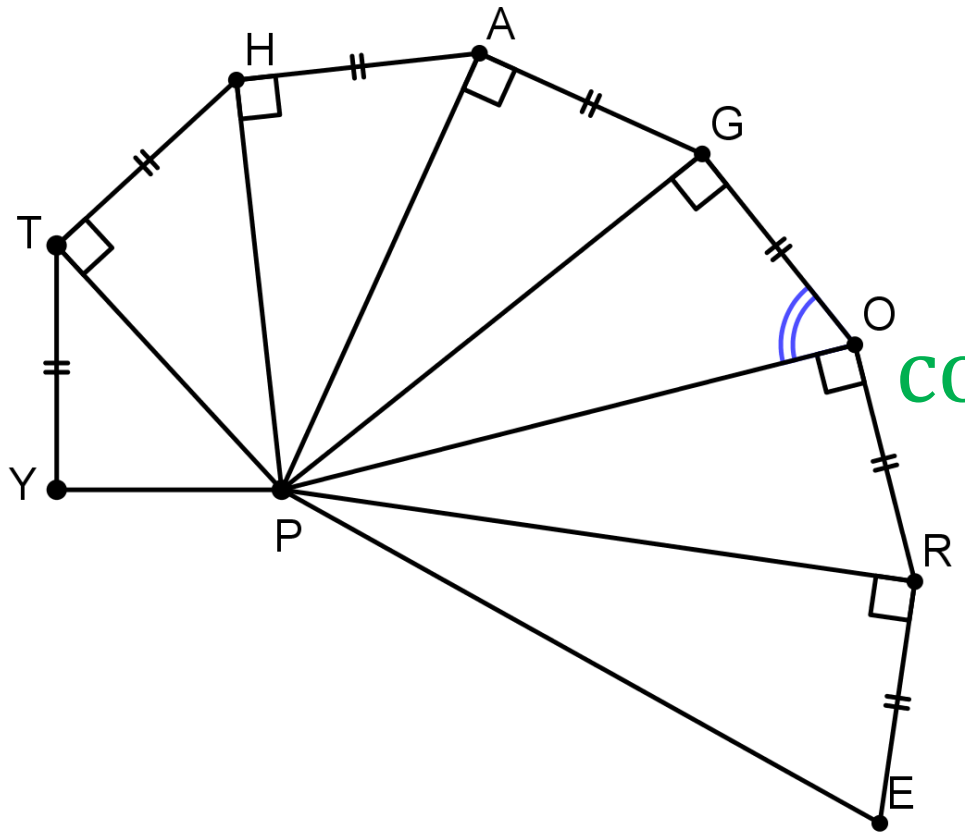


\widehat{POG} ?

$$PO = 6 ; TY = 2,5$$

$$\cos(\widehat{POG}) = \frac{GO}{PO} = \frac{2,5}{6}$$

Question 6



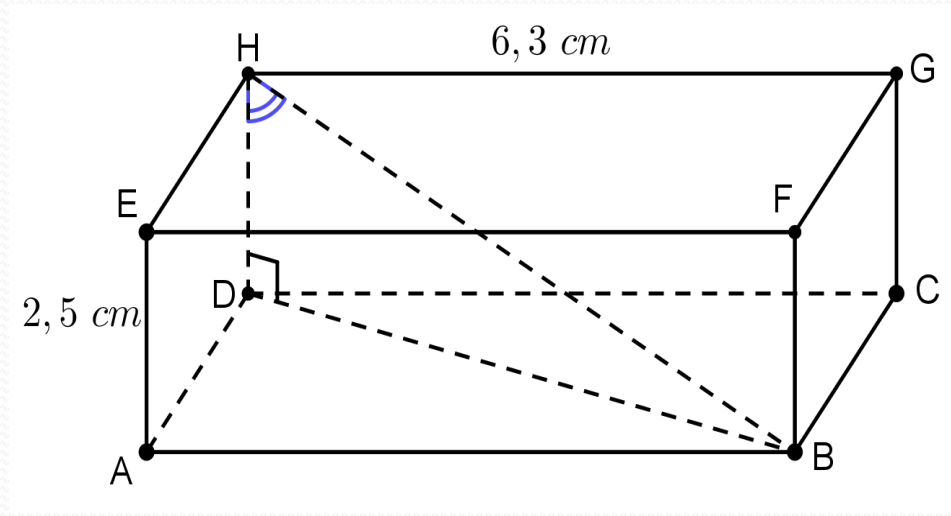
$\widehat{POG} ?$

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Cosinus

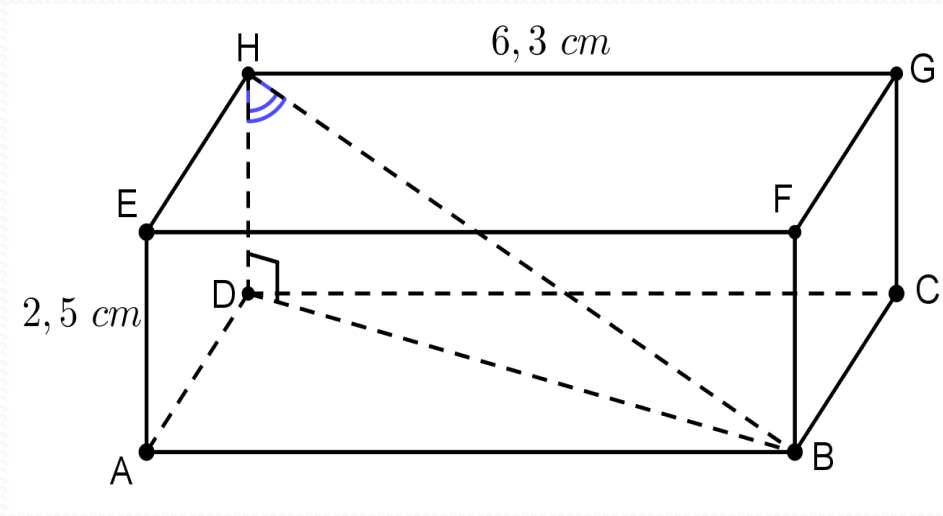
Question 7



\widehat{DHB} ?

$ABCDEFGH$ est un pavé droit et $HB = 7\text{ cm}$

Question 7

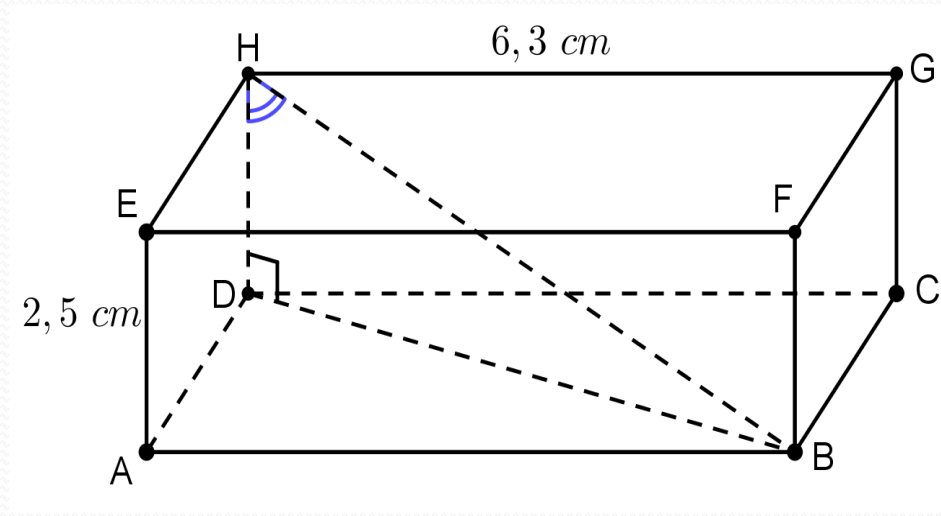


\widehat{DHB} ?

$$\cos(\widehat{DHB}) = \frac{DH}{HB} = \frac{2,5}{7}$$

ABCEFGH est un pavé droit et $HB = 7 \text{ cm}$

Question 7



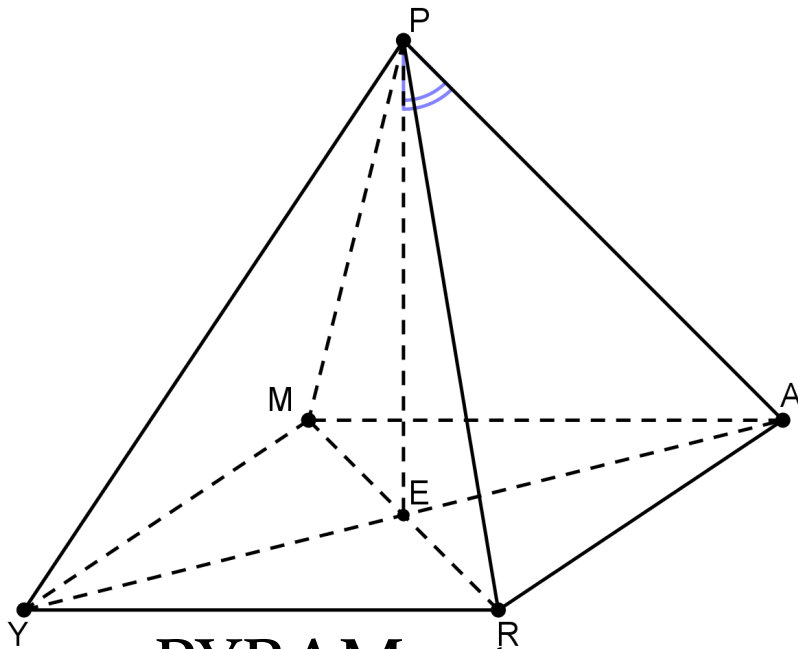
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Cosinus

ABCDEFGH est un pavé droit et $HB = 7$ cm

Question 8



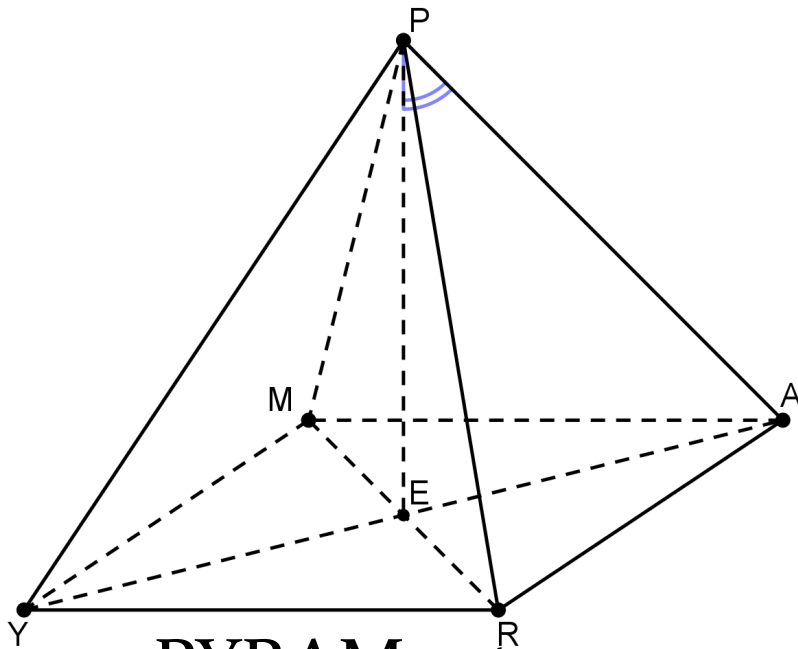
\widehat{EPA} ?

PYRAM est une
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$$PA = 7 \text{ cm}$$

$$\text{et } YA = 5,2 \text{ cm}$$

Question 8



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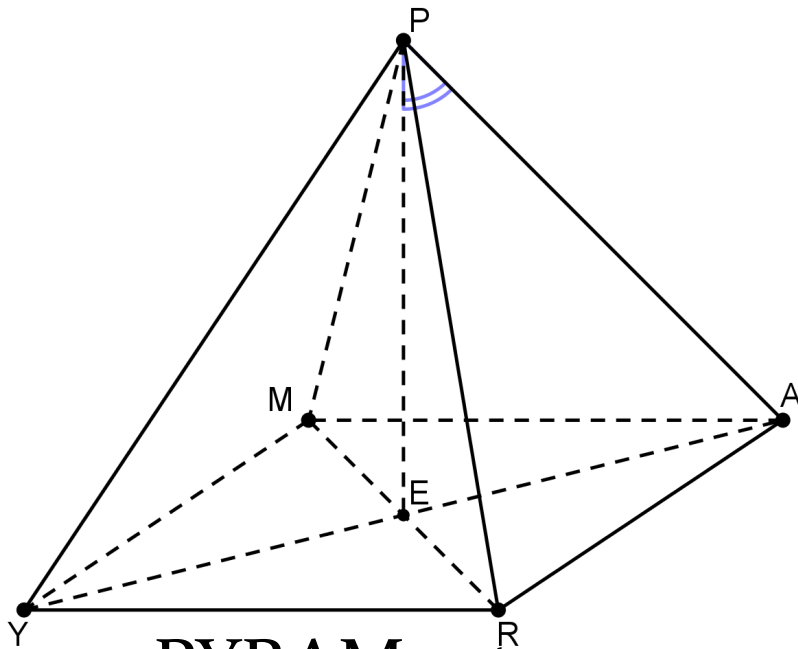
E est le milieu de $[YA]$.

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Question 8



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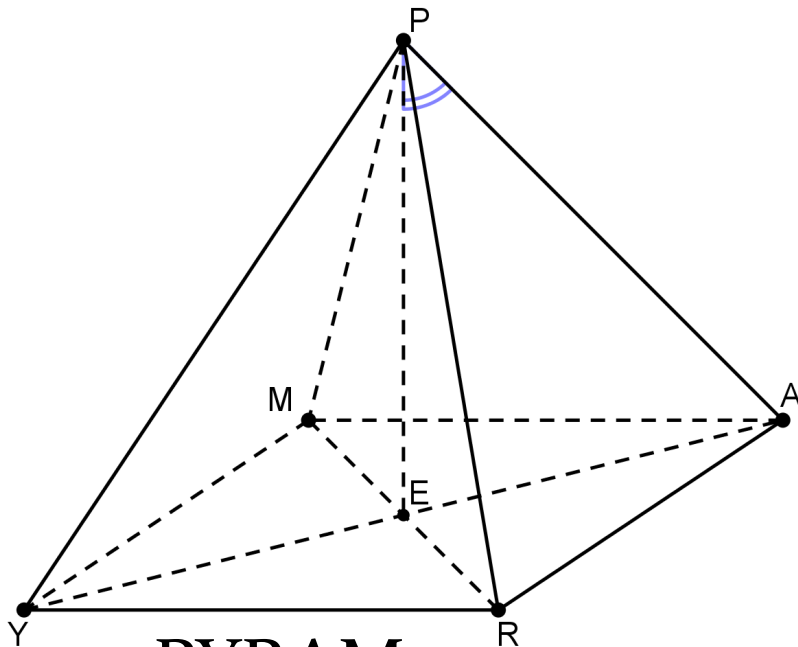
$$\text{et } YA = 5,2 \text{ cm}$$

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$$\sin(\widehat{EPA}) = \frac{EA}{PA} = \frac{2,6}{7}$$

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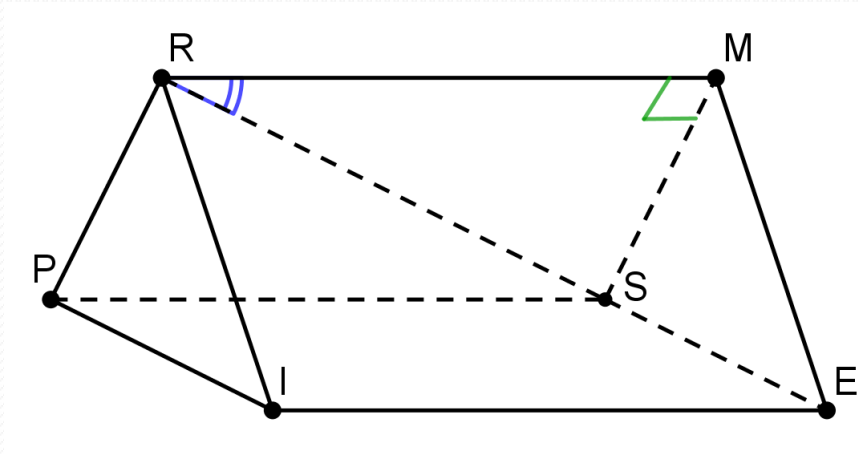
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Sinus

Question 9

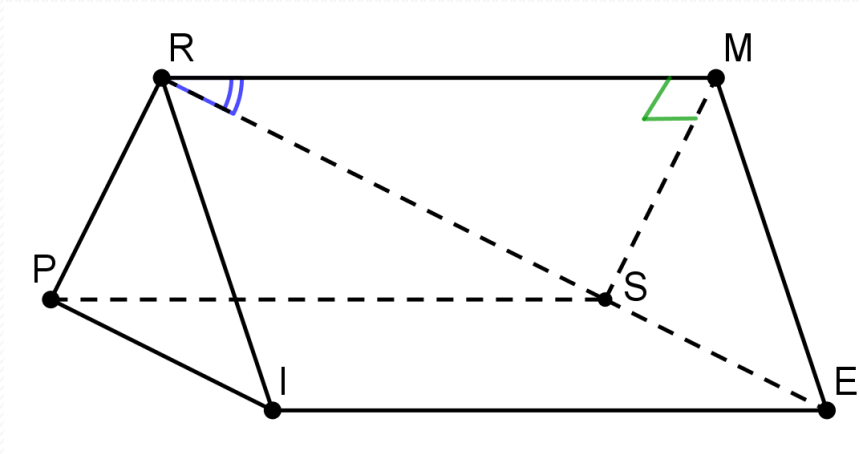


\widehat{MRS} ?

PRISME est un prisme
droit :

$IE = 7 \text{ cm}$ et $RS = 8 \text{ cm}$

Question 9



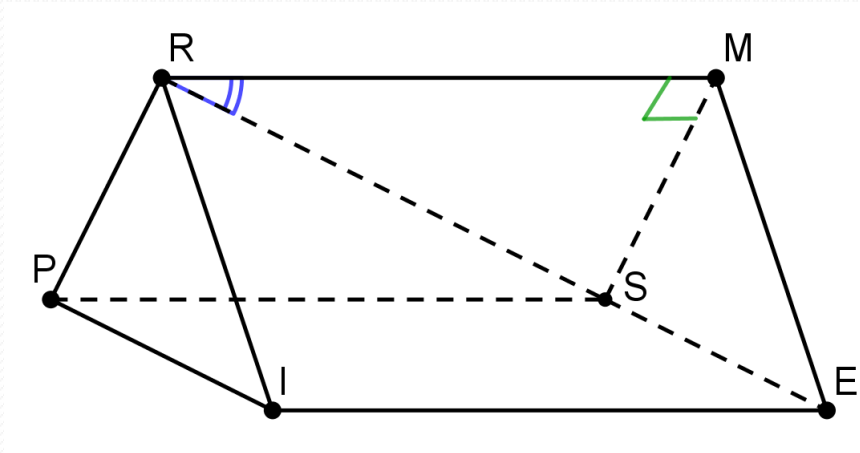
\widehat{MRS} ?

La face MRPS est un rectangle donc MRS est un triangle rectangle en M.

PRISME est un prisme droit :

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Question 9



PRISME est un prisme droit :

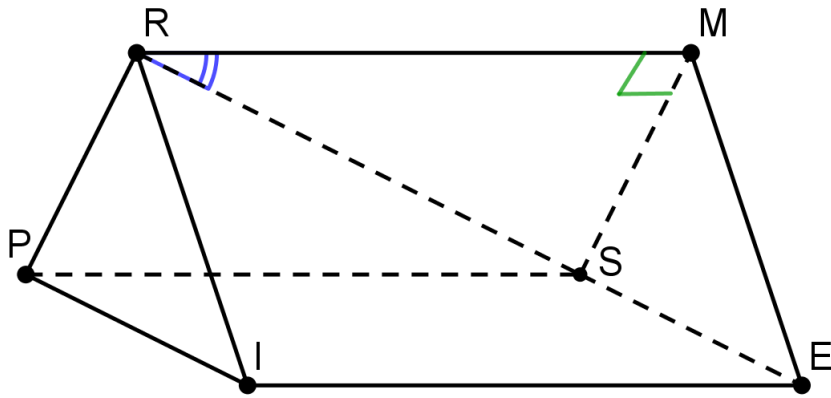
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Question 9



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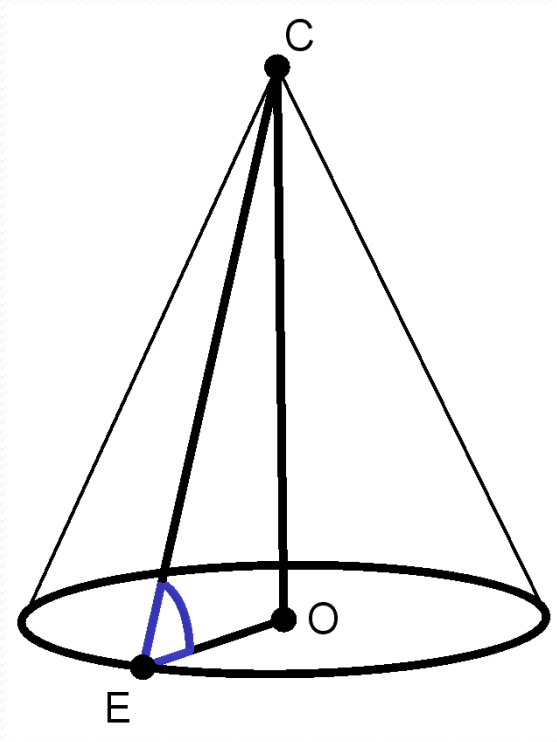
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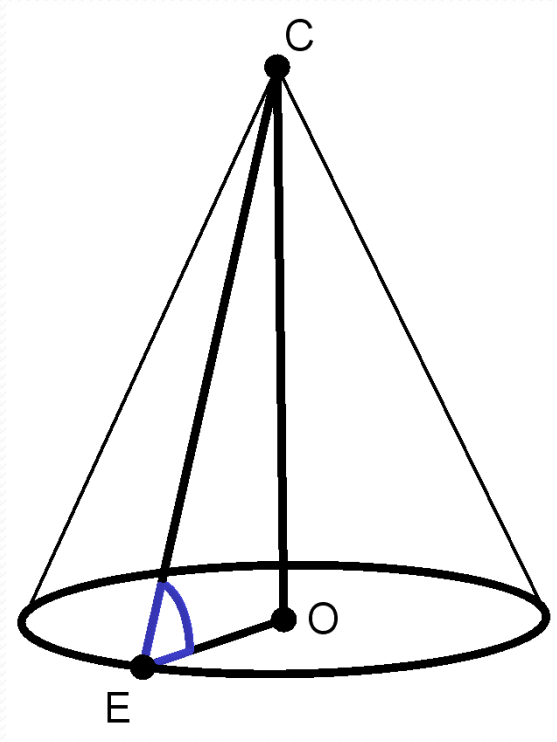
Question 10



\widehat{OEC} ?

Cône de révolution de
rayon 3 cm et de
génératrice de 10 cm.

Question 10

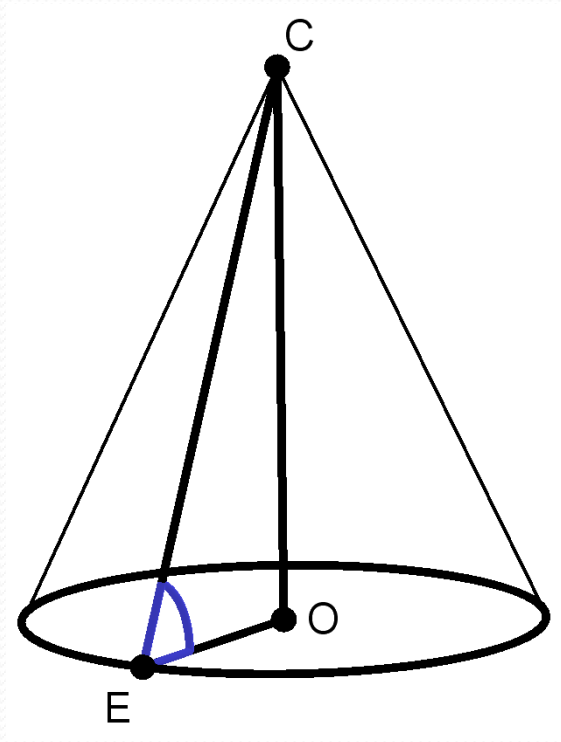


\widehat{OEC} ?

[CE] est une génératrice.
CEO est un triangle
rectangle en O.

Cône de révolution de
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Question 10



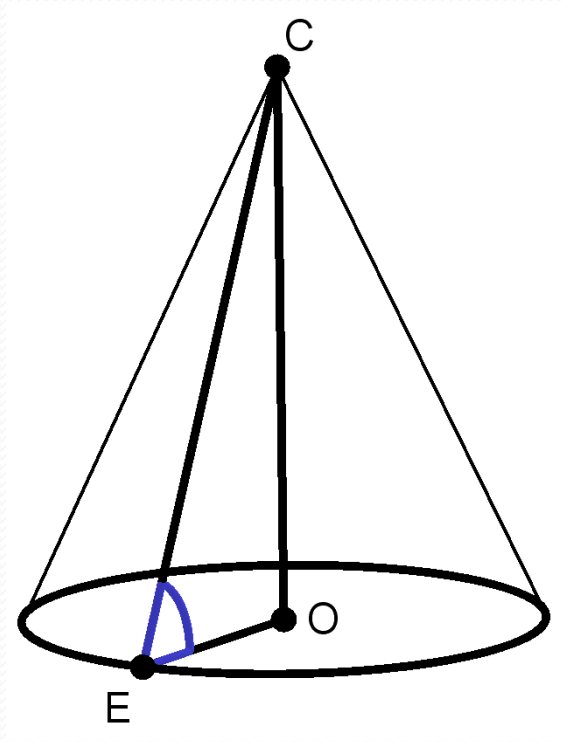
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Cône de révolution de
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Cosinus

Fin

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