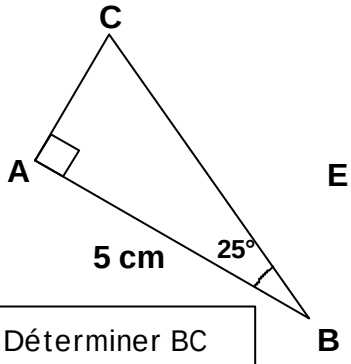
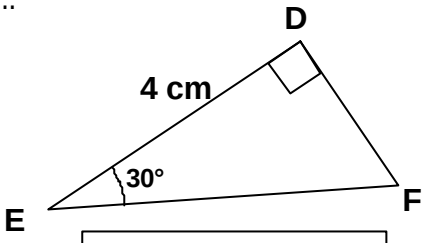
Trigonométrie

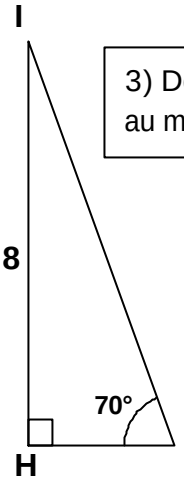
I) Déterminer une longueur...



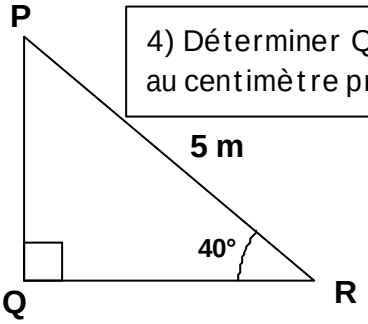
1) Déterminer BC
au centième près



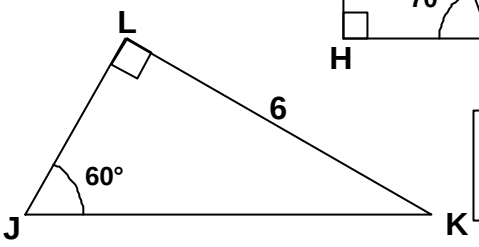
2) Déterminer DF
au millimètre près



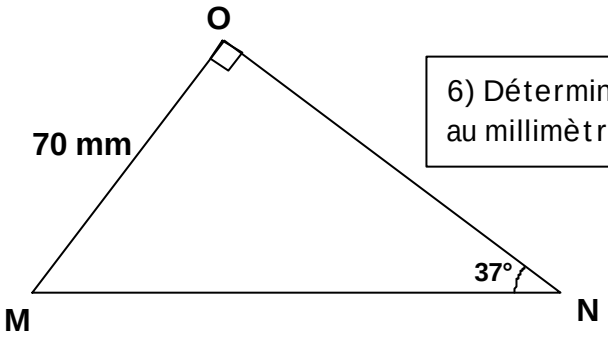
3) Déterminer GI
au millième près



4) Déterminer QR
au centimètre près



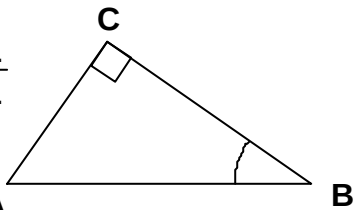
5) Déterminer LJ
au dixième près

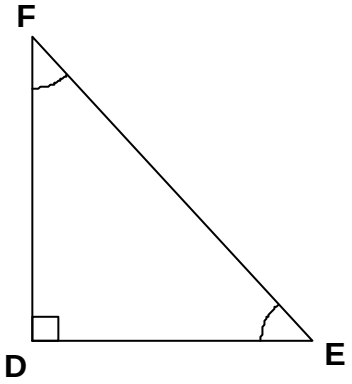


6) Déterminer MN
au millimètre près

II) Déterminer le cosinus d'un angle...

1) cos $\widehat{B}$ = $\frac{\text{.....}}{\text{.....}}$





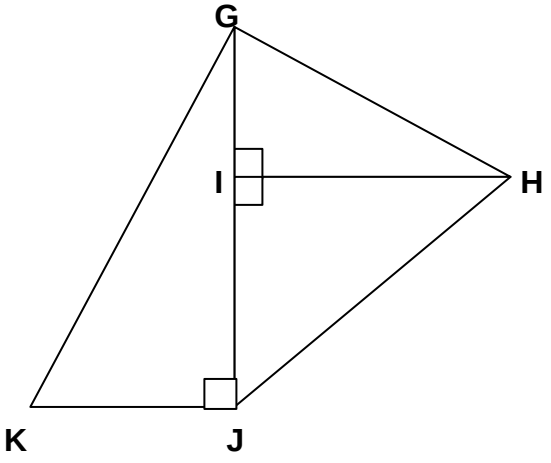
2) cos $\widehat{F}$ = $\frac{\text{.....}}{\text{.....}}$

cos $\widehat{E}$ = $\frac{\text{.....}}{\text{.....}}$

3) cos $\widehat{IGH}$ = $\frac{\text{.....}}{\text{.....}}$; cos $\widehat{GHI}$ = $\frac{\text{.....}}{\text{.....}}$;

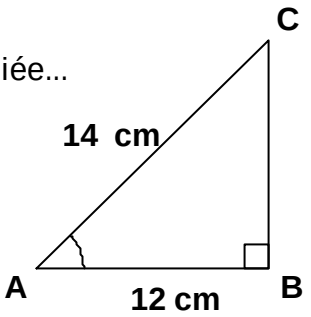
cos $\widehat{IHJ}$ = $\frac{\text{.....}}{\text{.....}}$; cos $\widehat{GKJ}$ = $\frac{\text{.....}}{\text{.....}}$;

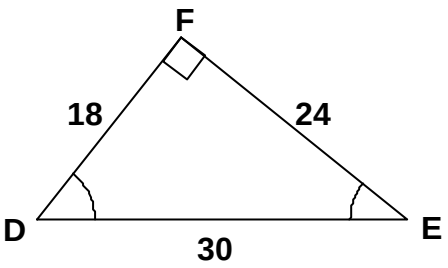
cos $\widehat{KGJ}$ = $\frac{\text{.....}}{\text{.....}}$; cos $\widehat{IJH}$ = $\frac{\text{.....}}{\text{.....}}$;



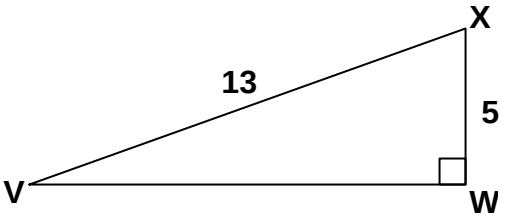
III) Déterminer le cosinus d'un angle sous forme de fraction simplifiée...

Exemple : $\cos \widehat{A} = \frac{AB}{AC} = \frac{12}{14} = \frac{6}{7}$





1) $\cos \widehat{D} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots}$; $\cos \widehat{E} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots}$

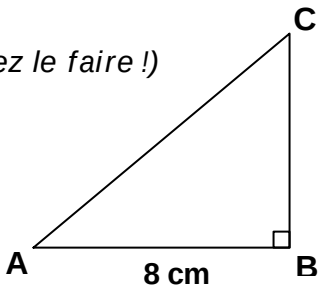


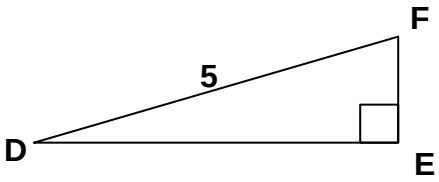
2) $\cos \widehat{V} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots}$; $\cos \widehat{X} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots}$

IV) On connaît le cosinus...

(Attention : il est interdit de calculer des angles, même si vous savez le faire !)

1) On donne $\cos \widehat{A} = \frac{10}{13}$. Déterminer AC.

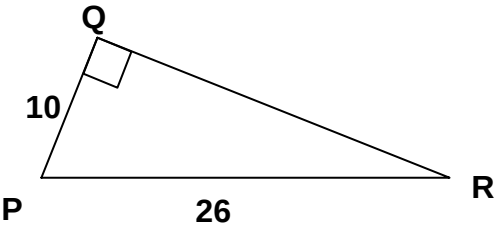


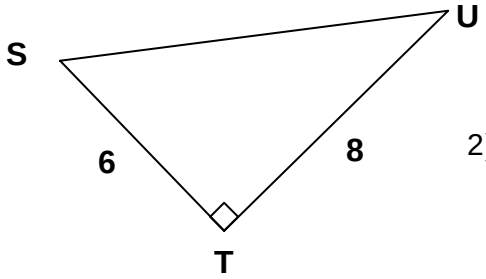


2) On donne $\cos \widehat{F} = \frac{7}{25}$. Déterminer FE et ED.

V) Déterminer un angle...

1) Calculer $\widehat{QPR}$ à 0,1° près.





2) Calculer $\widehat{TSU}$ et $\widehat{SUT}$ à 0,01° près.

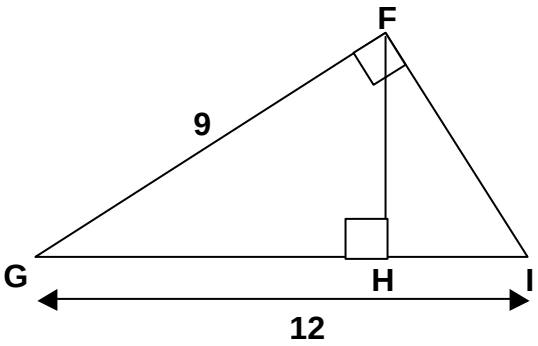
VI) Allons plus loin :

Dans le triangle FGI, $\cos \widehat{G} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots}$.

Dans le triangle FGH, $\cos \widehat{G} = \frac{\ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots}$.

L'angle $\widehat{G}$ est le même dans les deux triangles,

donc $\frac{GH}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots}$. Donc $GH = \frac{\ldots\ldots \times \ldots\ldots}{\ldots\ldots} = \frac{\ldots\ldots}{\ldots\ldots} = \ldots\ldots$



Correction :

I) 1) BC = 5,52 cm ; 2) DF = 2,3 cm ; 3) IG = 8,513 ; 4) QR = 3,83 m ;
5) JL = 3,5 ; 6) MN = 116 mm

II) 1) BC/AB ; 2) DF/FE ; DE/EF ; 3) GI/GH ; IH/GH ; IH/HJ ;
KJ/GK ; GJ/GK ; IJ/JH.

III) 1) cos $\widehat{D} = \frac{3}{5}$; cos $\widehat{E} = \frac{4}{5}$; 2) cos $\widehat{V} = \frac{12}{13}$; cos $\widehat{X} = \frac{5}{13}$

IV) 1) AC = 10,4 cm ; 2) FE = 1,4 et ED = 4,8.

V) $\widehat{QPR}$ = 67,4° ; $\widehat{TSU}$ = 53,13° ; $\widehat{SUT}$ = 36,87°.

VI) GH = $\frac{27}{4}$ = 6,75.