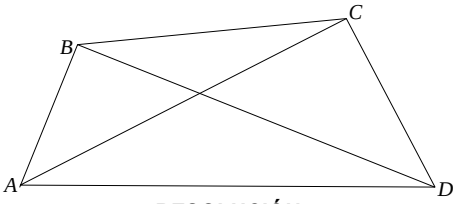
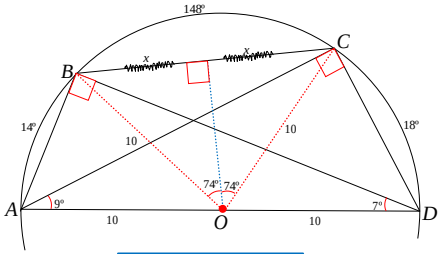
PROBLEMAS

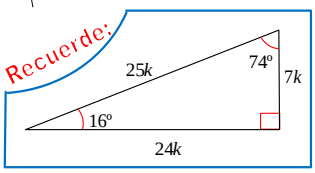
PREGUNTA 01

En la figura mostrada: $m\angle CAD = 9^o$, $m\angle BDA = 7^o$, $m\angle ABD = m\angle ACD = 90^o$ y AD=20u. Calcule la longitud BC.



RESOLUCIÓN

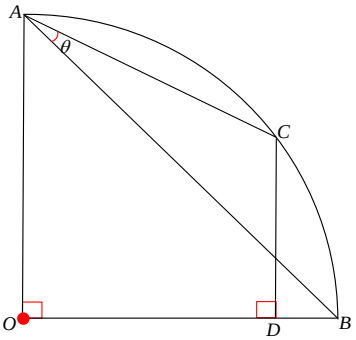




$$\frac{x}{10} = Sen74^o \Rightarrow x = 10\left(\frac{24}{25}\right) \Rightarrow L_{\overline{BC}} = 2x = 19.2u$$

PREGUNTA 02

En la figura mostrada, AOB es un sector circular, si: OD=2CD, calcule $Ctg\theta$



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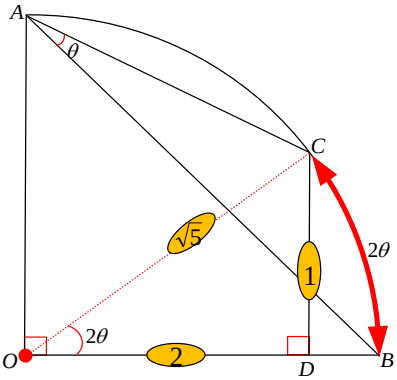
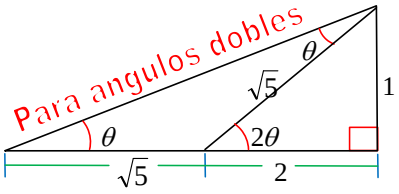
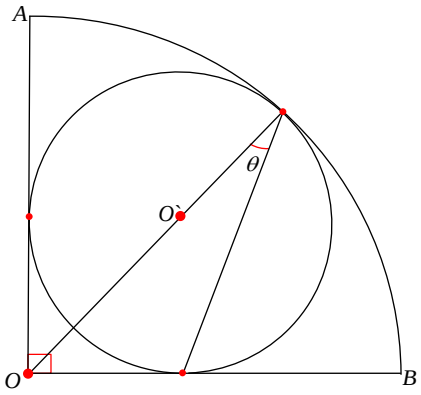




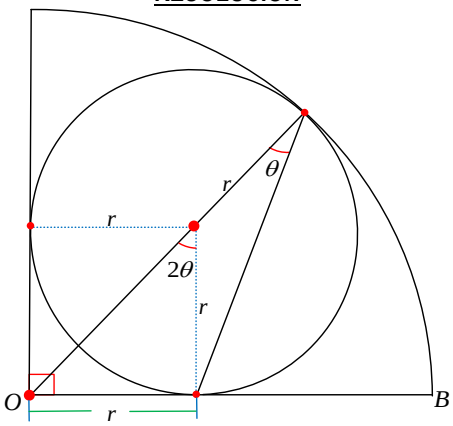
Por lo tanto: $Ctg\theta = \frac{\sqrt{5}+2}{1} = \sqrt{5}+2$

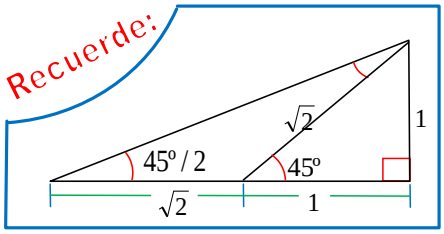
PREGUNTA 03

Del gráfico halle el valor de $Tg\theta$



RESOLUCIÓN





Se observa:

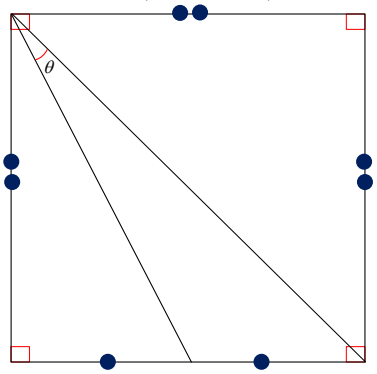
$$2\theta = 45^o \Rightarrow Tan\theta = Tan\left(\frac{45^o}{2}\right) = \frac{1}{\sqrt{2}+1} = \sqrt{2}-1$$

$$\Rightarrow Tan\theta = \sqrt{\left(\sqrt{2}-1\right)^2} = \sqrt{3-2\sqrt{2}}$$

PREGUNTA 04

A partir del gráfico calcular el valor de:

$$\sqrt{10}(Cos\theta - Sen\theta)$$



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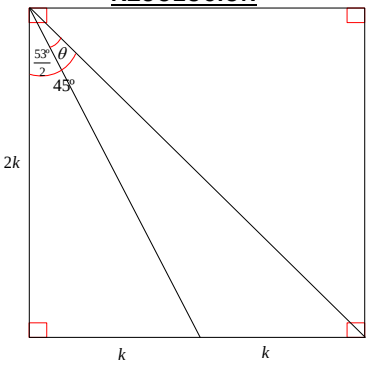
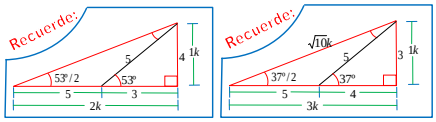


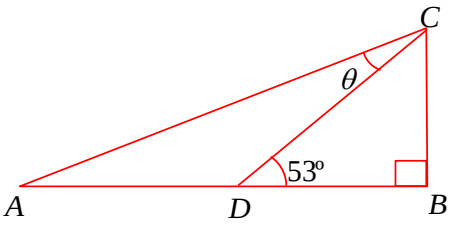


$$\theta = 45^o - \frac{53^o}{2} = \frac{37^o}{2}$$

$$\sqrt{10}(Cos\theta - Sen\theta) = \sqrt{10}\left(\frac{3}{\sqrt{10}} - \frac{1}{\sqrt{10}}\right) = 2$$

PREGUNTA 05

Si: AD=15 y BC=4, calcule $6.Ctg\theta + 1$



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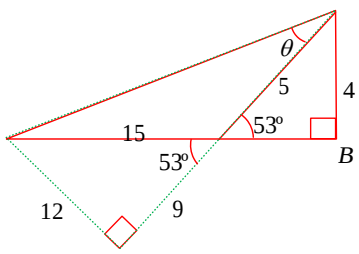
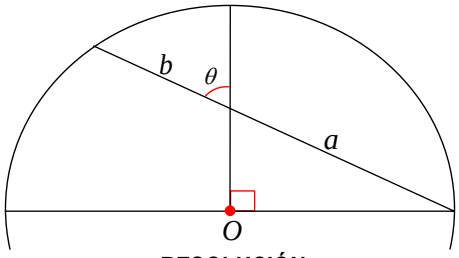


$$6.Ctg\theta + 1 = 6\left(\frac{14}{12}\right) + 1 = 8$$

PREGUNTA 06

Halle al valor de: $A=2Sen^2\theta-1$



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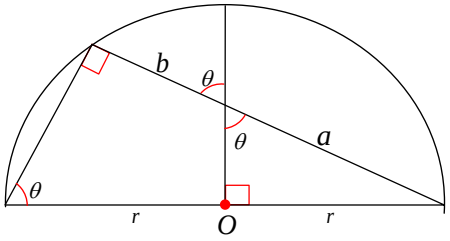


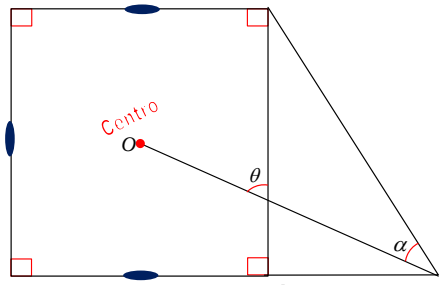
$$Sen\theta=\frac{r}{a}=\frac{a+b}{2r}\Rightarrow r=\sqrt{\frac{a(a+b)}{2}}$$

$$A=2\left(\frac{\frac{\sqrt{a^2+ab}}{\sqrt{2}}}{a}\right)^2-1=\frac{2(a^2+ab)}{2a^2}-1=\frac{b}{a}$$

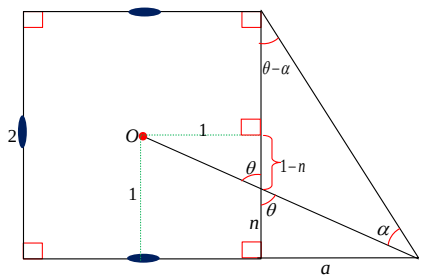
PREGUNTA 07

A partir del gráfico mostrado, calcule el valor de:

$$Tan(\theta-\alpha)-\frac{1}{2}Tan\theta$$



RESOLUCIÓN



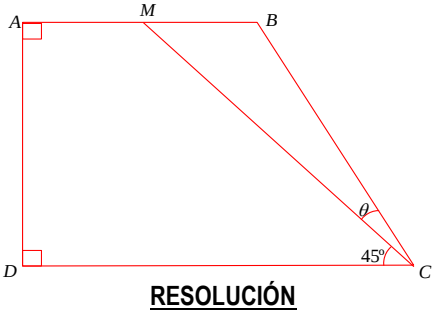
Primero: $Tan\theta=\frac{1}{1-n}=\frac{a}{n}\Rightarrow a=\frac{n}{1-n}$

Segundo:

$$Tan(\theta-\alpha)-\frac{1}{2}Tan\theta=\frac{a}{2}-\frac{1}{2}.\frac{a}{n}=\frac{1}{2}\left[a-\frac{a}{n}\right]=\frac{-1}{2}$$

PREGUNTA 08

Si DC=2(AB) y AM=MB. Calcule tangente del ángulo Tetha.



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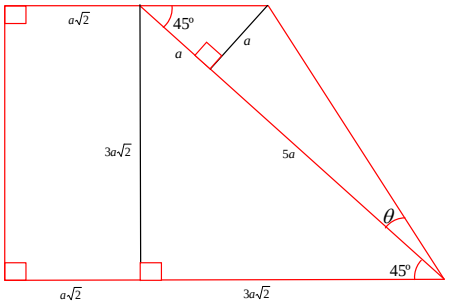

$$Tan\theta=\frac{1}{5}$$

PREGUNTA 09

RESOLUCIÓN

PREGUNTA 10

RESOLUCIÓN

PREGUNTA 11

RESOLUCIÓN

PREGUNTA 12

RESOLUCIÓN

PREGUNTA 13

RESOLUCIÓN

PREGUNTA 14

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PREGUNTA 15

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PREGUNTA 16

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PREGUNTA 22

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PREGUNTA 23

RESOLUCIÓN

PREGUNTA 24