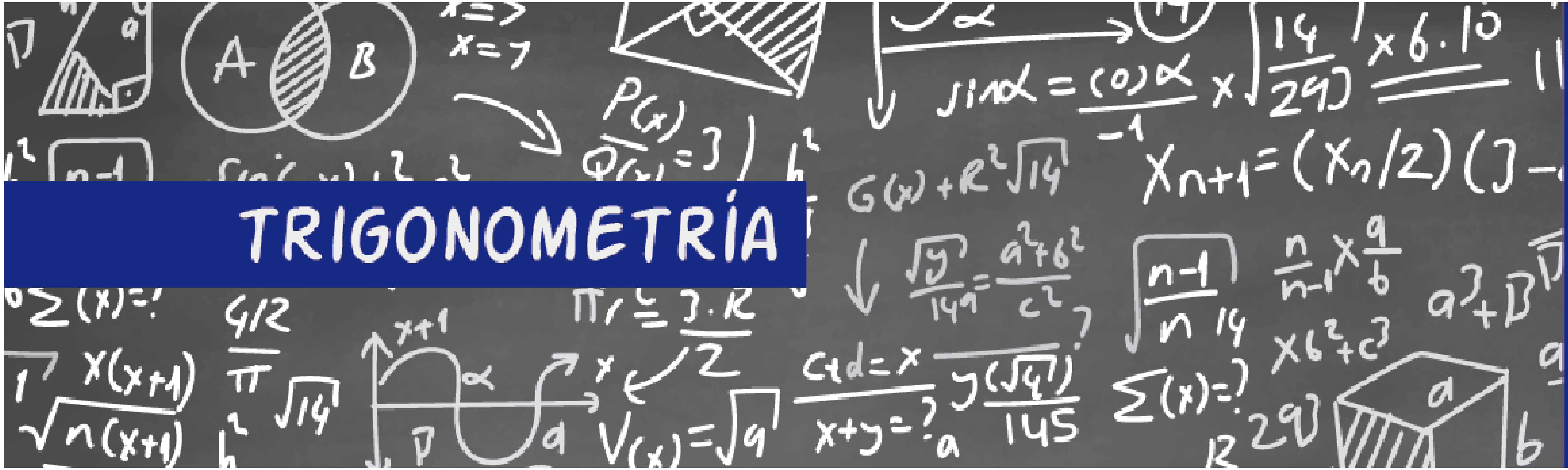


TRIGONOMETRÍA

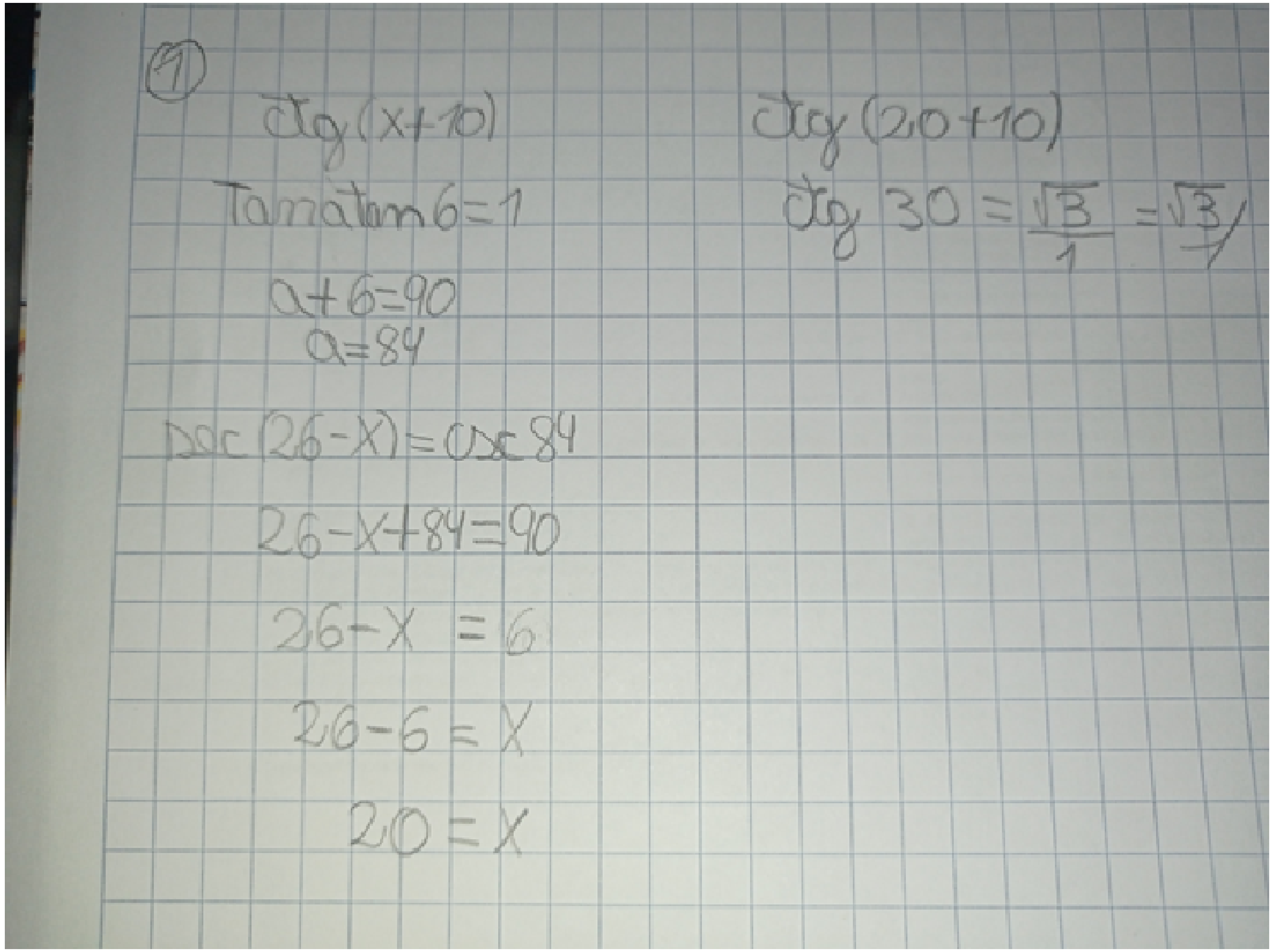
ALGARROBOS

Nombre y apellidos:

Calcula $\cot(x + 10°)$ si a es agudo, además:

$\tan a \tan 6° = 1$

$\sec(26° - x) = \csc a$



(1)

$ctg(x+10)$

$Tan a tan 6 = 1$

$a + 6 = 90$

$a = 84$

$sec(26 - X) = csc 84$

$26 - X + 84 = 90$

$26 - X = 6$

$26 - 6 = X$

$20 = X$

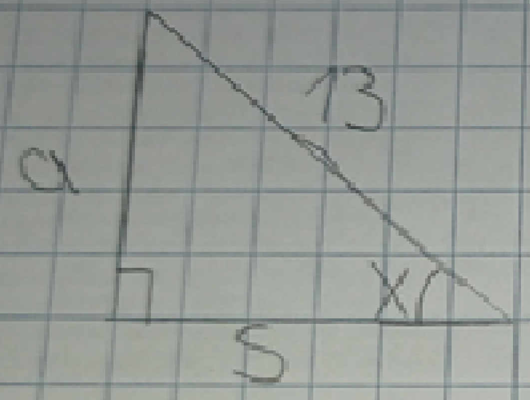
$ctg(20+10)$

$ctg\ 30 = \frac{\sqrt{3}}{1} = \sqrt{3}$

Si: $\cos x = \dfrac{5}{13}$, (x agudo);

halla: $M = 4(\cot x + \csc x)$

$\cos x = \frac{5}{13}$



$169 = 25 + a^2$

$144 = a^2$

$a = 12$

$M = 4(\text{ctg}\,x + \csc x)$

$M = 4\left(\frac{5}{12} + \frac{13}{12}\right)$

$M = \cancel{4}\left(\frac{18}{\cancel{12}}\right)_3$

$M = 6$

Para α y θ agudos se cumple: $\tan\alpha \tan\theta = 1$

Indica el valor de verdad de las proposiciones:

- Son ángulos iguales. ( )
- La suma de los ángulos es igual a $\frac{\pi}{2}$ rad. ( )
- $\tan\left(\frac{\alpha+\theta}{2}\right)$ es igual a la unidad. ( )

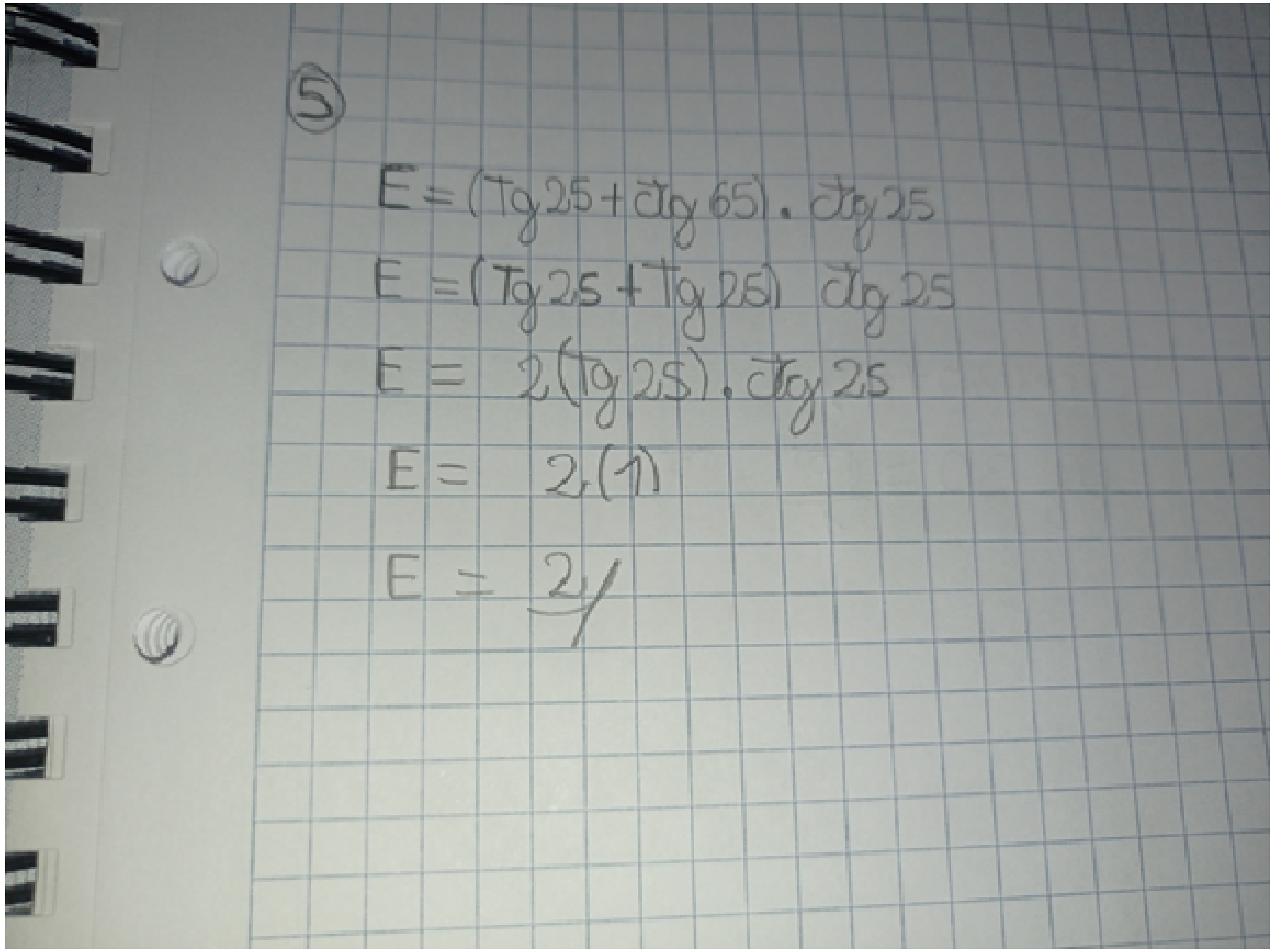
4

Son iguales (F)

La suma de los angulos es igual a $\frac{\pi}{2}$ rad (V)

Tan $\left(\frac{\alpha+\theta}{2}\right)$ es igual a la unidad (V)

Determinar : $\mathbf{E=(tg\,25^{o}+ctg\,65^{o}).ctg\,25^{o}}$



⑤

$E=(Tg\,25+ctg\,65).ctg\,25$

$E=(Tg\,25+Tg\,25)\ ctg\,25$

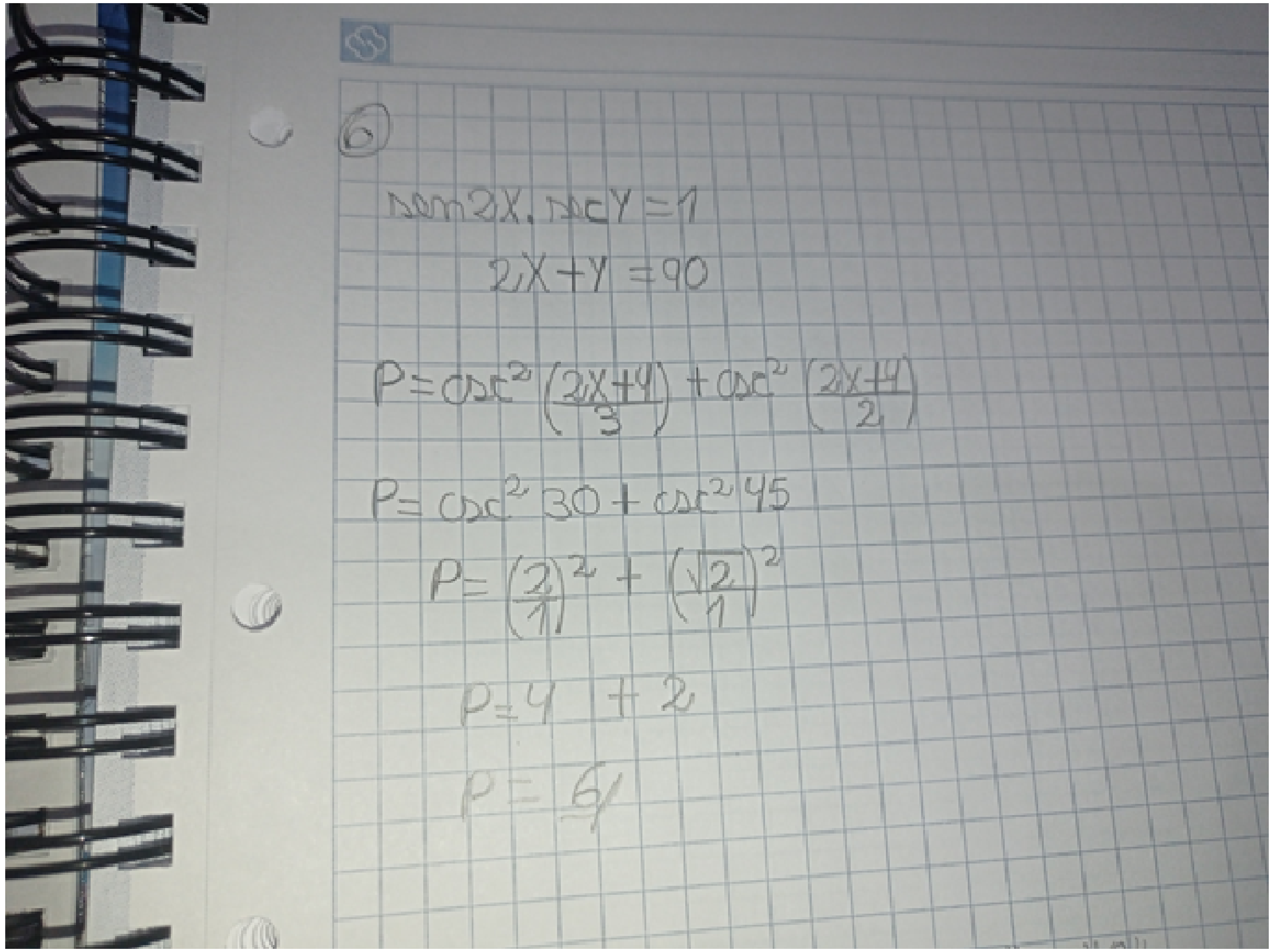
$E=2(Tg\,25).ctg\,25$

$E=2(1)$

$E=\underline{2}$

Si : **sen2x sec y=1** , Determinar :

$$P=\csc^2\left(\frac{2x+y}{3}\right)+\csc^2\left(\frac{2x+y}{2}\right)$$



6

$\operatorname{sen} 2X \cdot \sec Y = 1$

$2X + Y = 90$

$P = \csc^2\left(\frac{2X+Y}{3}\right) + \csc^2\left(\frac{2X+Y}{2}\right)$

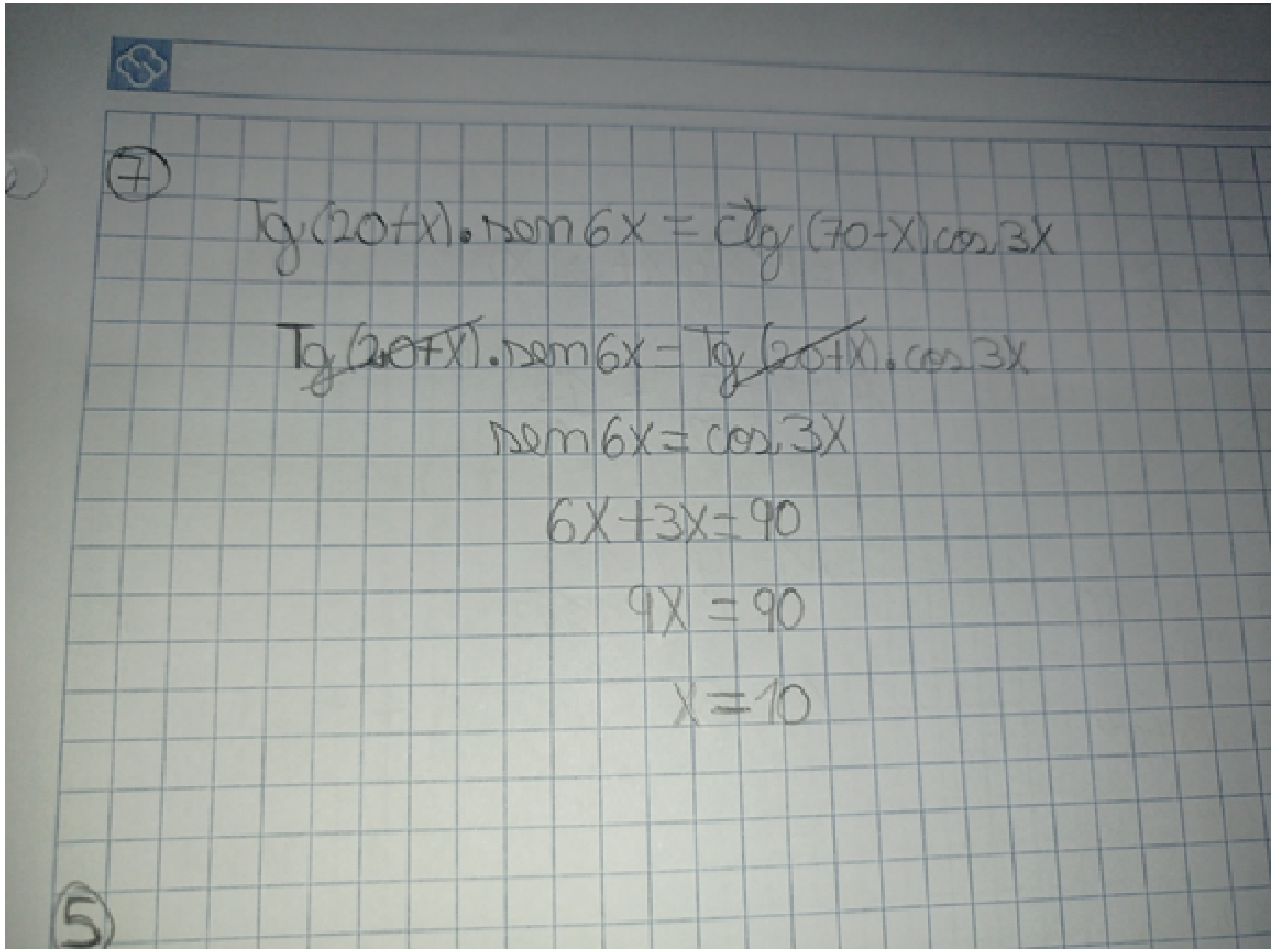
$P = \csc^2 30 + \csc^2 45$

$P = \left(\frac{2}{1}\right)^2 + \left(\frac{\sqrt{2}}{1}\right)^2$

$P = 4 + 2$

$P = 6$

$$tg(20^\circ + x)sen6x = ctg(70^\circ - x)cos3x$$



(7)

$Tg(20+X) \cdot sen6X = ctg(70-X)cos3X$

$Tg\cancel{(20+X)} \cdot sen6X = Tg\cancel{(20+X)} \cdot cos3X$

$sen6X = cos3X$

$6X+3X=90$

$9X=90$

$X=10$

(5)

Si: $\operatorname{sen}(\alpha - 20°) = \cos(\theta - 30°)$, "α" y "θ" ángulos agudos , Determinar :

$$A = \frac{\tan\left(\dfrac{\alpha+\theta}{4}\right) + \cot\left(\dfrac{\alpha+\theta}{2}\right)}{\cot(\alpha+\theta-85°) + \tan(\alpha+\theta-120°)}$$

$P = \underline{6}$

8

$\operatorname{sen}(\alpha-20) = \cos(\theta-30)$, "$\alpha$" y "$\theta$"

$$A = \frac{Tg\,\dfrac{\alpha+\theta}{4} + ctg\,\dfrac{\alpha+\theta}{2}}{ctg\,(\alpha+\theta-85 + Tg\,(\alpha+\theta-120)}$$

$$A = \frac{Tg\,35 + ctg\,70}{ctg\,55 + tg\,20} \quad \frac{Tg\,35 + ctg\,70}{Tg\,35 + ctg\,70} = 1$$

Si : $\sec\alpha = \csc 2\phi$, Determinar :

$$R = \tan\left[\frac{\alpha}{2} + \phi\right] + \sec\left(330^\circ - 3\alpha - 6\phi\right)$$

Si: $\operatorname{sen}(4x+10^\circ)\operatorname{tg}(3x+30^\circ)\sec x=\operatorname{ctg}(60^\circ-3x)$

Determinar : $P=6\operatorname{tg}^2(3x-18^\circ)+7\operatorname{tg}^6(x+29^\circ)$

(10) $\operatorname{sen}(4x+10)\operatorname{tg}(3x+30)\sec x=\operatorname{ctg}(60-3x)$

$$\operatorname{sen}(4x+10)\cdot\cancel{\operatorname{tg}(3x+30)}\cdot\sec x=\cancel{\operatorname{tg}(3x+30)}$$

$$\operatorname{sen}(4x+10)\cdot\sec = 1$$

$$\operatorname{sen}(4x+10)=\frac{1}{\sec x}$$

$$\operatorname{sen}(4x+10)=\cos x$$

$$\operatorname{sen}37=\cos 53$$

$$4x+10+x=90$$

$$5x+10=90$$

$$5x=80$$

$$x=16$$

$$P=6\operatorname{tg}^2(\underbrace{3x}_{48}-18)+7\operatorname{tg}^6(\underbrace{x}_{16}+29)$$

$$=6\operatorname{tg}^2(30)+7\operatorname{tg}^6(45)$$

$$=6\left(\frac{1}{\sqrt{3}}\right)^2+7\operatorname{tg}^6(1)$$

$$=6\cdot\frac{1}{3}+7$$

$$=2+7=9$$