TRIGONOMETRIA
AULA 4 I

12 *Hallar la medida de un ángulo en radianes si se cumple :* $C + S = C^2 - S^2$

$C = 10K$
$S = 9K$

$K = \frac{20R}{\pi}$

$C + S = C^2 - S^2$

$C + S = (C - S)(C + S)$

$1 = C - S$

$1 = 10K - 9K$

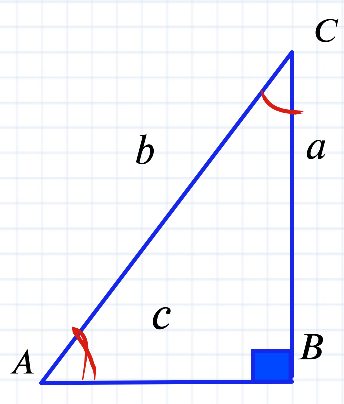
$1 = K$

$1 = \frac{20R}{\pi}$

$\pi = 20R$

$(a - b)(a + b) = (a^2 - b^2)$

13 *En un triángulo rectángulo ABC recto en B reducir :*
$E = SenA.\,SecC + CosC.\,CscA$



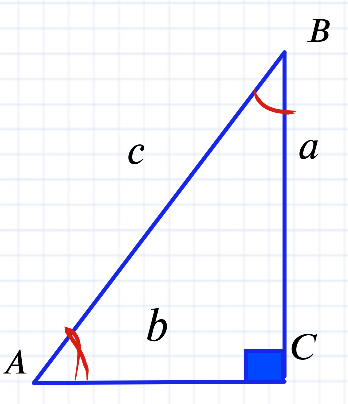
$E = SenA.\,SecC + CosC.\,CscA$

$E = \left(\frac{a}{b}\right)\left(\frac{b}{a}\right) + \left(\frac{a}{b}\right)\left(\frac{b}{a}\right)$

$E = 1 + 1$

$E = 2$

14 *En un triángulo ABC recto en C simplificar :*
$E = a.\,CtgA - c.\,SenB$



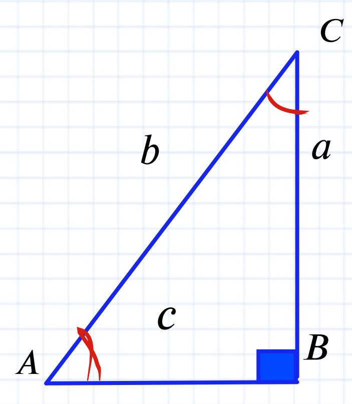
$E = a.\,CtgA - c.\,SenB$

$E = a\left(\frac{b}{a}\right) - c\left(\frac{b}{c}\right)$

$E = b - b$

$E = 0$

15 *En un triángulo rectángulo ABC recto en B reducir:*
$E = (SecA - SenC)\,CtgA - CosC$



Teorema de Pitagoras

$b^2 = a^2 + c^2$

$b^2 - c^2 = a^2$

$E = (SecA - SenC)\,CtgA - CosC$

$E = \left(\frac{b}{c} - \frac{c}{b}\right)\left(\frac{c}{a}\right) - \frac{a}{b}$

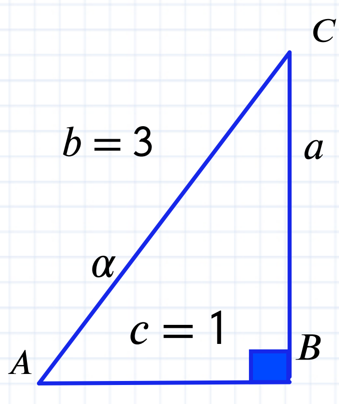
$E = \left(\frac{b^2 - c^2}{cb}\right)\left(\frac{c}{a}\right) - \frac{a}{b}$

$E = \left(\frac{a^2}{b}\right)\left(\frac{1}{a}\right) - \frac{a}{b}$

$E = \frac{a}{b} - \frac{a}{b}$

$E = 0$

16 *Si α es un angulo agudo tal que* $Cos\alpha = \frac{1}{3}$, *Calcular* $Tg\alpha$



$Cos\,\alpha = \frac{c}{b}$

$a^2 + c^2 = b^2$

$a^2 + 1^2 = 3^2$

$a^2 = 9 - 1$

$a^2 = 8$

$a = \sqrt{8} = \sqrt{4(2)}$

$a = 2\sqrt{2}$

$Tg\alpha = \frac{a}{c}$

$Tg\alpha = \frac{2\sqrt{2}}{1}$

$Tg\alpha = 2\sqrt{2}$

g

17 *Si :* $Tg\,3x.\,Ctg(x + 40^\circ) = 1$. *Calcular :* $Cos\,3x$

$Sen\theta\,.\,Csc\theta = 1$
$Cos\theta\,.\,Sec\theta = 1$
$Tg\theta\,.\,Ctg\theta = 1$

$Tg\theta\,.\,Ctg\theta = 1$

$Tg\theta = \frac{1}{Ctg\theta}$

$Tg\,3x.\,Ctg(x + 40^\circ) = 1$

$\frac{1}{Ctg\,3x}(Ctg(x + 40)) = 1$

$Ctg(x + 40) = Ctg\,3x$

$x + 40 = 3x$

$40 = 3x - x$

$40 = 2x$

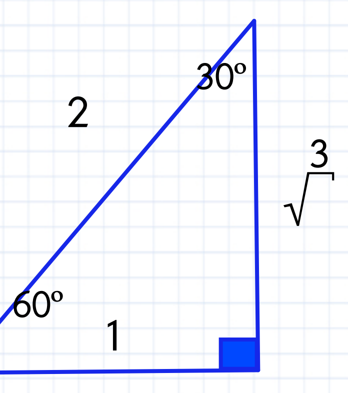
$\frac{40}{2} = x$

$20^\circ = x$

$60 = 3x$

$Cos\,3x$

$Cos\,60^\circ = \frac{1}{2}$



18 *Hallar "x" Si :* $Cos(2x - 10^\circ)\,Sec\,x(+ 30^\circ) = 1$

$Sen\theta\,.\,Csc\theta = 1$
$Cos\theta\,.\,Sec\theta = 1$
$Tg\theta\,.\,Ctg\theta = 1$

$Cos\theta\,.\,Sec\theta = 1$

$Cos\theta = \frac{1}{Sec\theta}$

$Cos(2x - 10^\circ)\,Sec\,x(+ 30^\circ) = 1$

$\left(\frac{1}{Sec(2x - 10)}\right)Sec(x + 30) = 1$

$Sec(x + 30) = Sec(2x - 10)$

$x + 30 = 2x - 10$

$30 + 10 = 2x - x$

$40^\circ = x$

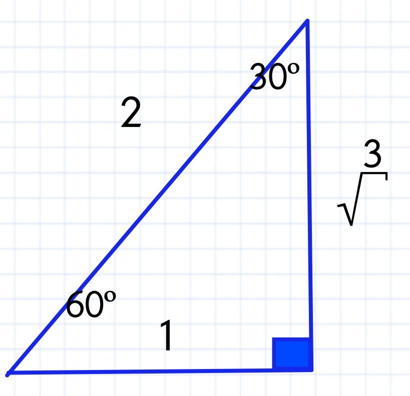
19 *Calcular :* $E = sen^2 30^\circ + tg37^\circ$

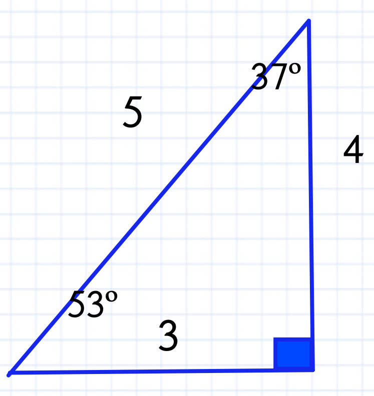
$E = sen^2 30^\circ + tg37^\circ$

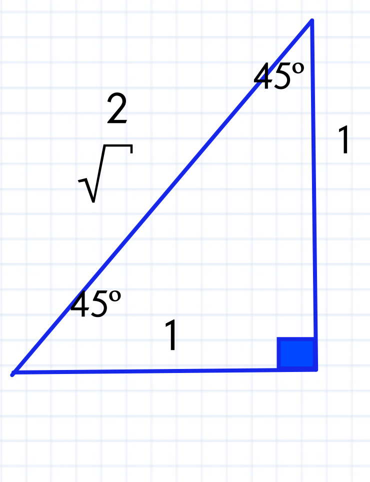
$E = \left(\frac{1}{2}\right)^2 + \frac{3}{4}$

$E = \frac{1}{4} + \frac{3}{4} = \frac{4}{4}$

$E = 1$







20 *Evaluar :* $E = \frac{(Sen\,45^\circ)^2 + Cos\,60^\circ}{Csc\,30^\circ}$

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

$E = \frac{2}{2} = \frac{1}{2}$

21 *Calcular :* $E = (sen30^\circ + cos60^\circ)\,tg37^\circ$

$E = (sen30^\circ + cos60^\circ)\,tg37^\circ$

$E = \left(\frac{1}{2} + \frac{1}{2}\right)\left(\frac{3}{4}\right)$

$E = 1\left(\frac{3}{4}\right) = \frac{3}{4}$