1. Relaciones entre las razones trigonométricas

a) $\operatorname{sen}^2\alpha + \cos^2\alpha = 1$

b) $1 + \tan^2\alpha = \sec^2\alpha$

c) $1 + \cot^2\alpha = \operatorname{cosec}^2\alpha$

d) $\tan\alpha = \dfrac{\operatorname{sen}\alpha}{\cos\alpha}$

e) $\operatorname{cosec}\alpha = \dfrac{1}{\operatorname{sen}\alpha}$

f) $\sec\alpha = \dfrac{1}{\cos\alpha}$

g) $\cot\alpha = \dfrac{1}{\tan\alpha} = \dfrac{\cos\alpha}{\operatorname{sen}\alpha}$

2. Suma de ángulos	3. Ángulo doble	4. Ángulo mitad
$\operatorname{sen}(\alpha+\beta) = \operatorname{sen}\alpha\cdot\cos\beta + \operatorname{sen}\beta\cdot\cos\alpha$	$\operatorname{sen}(2\alpha) = 2\cdot\operatorname{sen}\alpha\cdot\cos\alpha$	$\operatorname{sen}\left(\frac{\alpha}{2}\right) = \pm\sqrt{\frac{1-\cos\alpha}{2}}$
$\cos(\alpha+\beta) = \cos\alpha\cdot\cos\beta - \operatorname{sen}\alpha\cdot\operatorname{sen}\beta$	$\cos(2\alpha) = \cos^2\alpha - \operatorname{sen}^2\alpha$	$\cos\left(\frac{\alpha}{2}\right) = \pm\sqrt{\frac{1+\cos\alpha}{2}}$
$\tan(\alpha+\beta) = \frac{\tan\alpha+\tan\beta}{1-\tan\alpha\cdot\tan\beta}$	$\tan(2\alpha) = \frac{2\tan\alpha}{1-\tan^2\alpha}$	$\tan\left(\frac{\alpha}{2}\right) = \pm\sqrt{\frac{1-\cos\alpha}{1+\cos\alpha}}$

5. Transfomación de sumas en productos

a) $\operatorname{sen}A + \operatorname{sen}B = 2\cdot\operatorname{sen}\dfrac{A+B}{2}\cdot\cos\dfrac{A-B}{2}$

b) $\operatorname{sen}A - \operatorname{sen}B = 2\cdot\cos\dfrac{A+B}{2}\cdot\operatorname{sen}\dfrac{A-B}{2}$

c) $\cos A + \cos B = 2\cdot\cos\dfrac{A+B}{2}\cdot\cos\dfrac{A-B}{2}$

d) $\cos A - \cos B = -2\cdot\operatorname{sen}\dfrac{A+B}{2}\cdot\operatorname{sen}\dfrac{A-B}{2}$

6. Signos de las razones trigonométricas

Signos	I Cuad.	II Cuad.	III Cuad.	IV Cuad.
sen	+	+	-	-
cos	+	-	-	+
tan	+	-	+	-
sec	+	-	-	+
cosec	+	+	-	-
cot	+	-	+	-

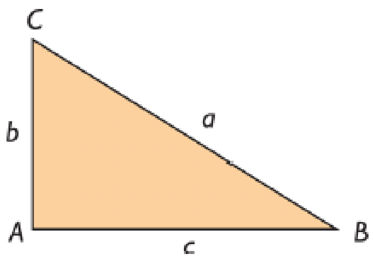
7. Relaciones entre los cuatro cuadrantes

$\operatorname{sen}(90^o-\alpha)=\cos\alpha$ $\cos(90^o-\alpha)=\operatorname{sen}\alpha$ $\tan(90^o-\alpha)=\cot\alpha$	$\operatorname{sen}(90^o+\alpha)=\cos\alpha$ $\cos(90^o+\alpha)=-\operatorname{sen}\alpha$ $\tan(90^o+\alpha)=-\cot\alpha$	$\operatorname{sen}(180^o-\alpha)=\operatorname{sen}\alpha$ $\cos(180^o-\alpha)=-\cos\alpha$ $\tan(180^o-\alpha)=-\tan\alpha$	$\operatorname{sen}(180^o+\alpha)=-\operatorname{sen}\alpha$ $\cos(180^o+\alpha)=-\cos\alpha$ $\tan(180^o+\alpha)=+\tan\alpha$
$\operatorname{sen}(360^o-\alpha)=\operatorname{sen}(-\alpha)=-\operatorname{sen}\alpha$ $\cos(360^o-\alpha)=\cos(-\alpha)=\cos\alpha$ $\tan(360^o-\alpha)=\tan(-\alpha)=-\tan\alpha$		$\operatorname{sen}(270-\alpha)=-\cos(\alpha)$ $\cos(270-\alpha)=-\operatorname{sen}(\alpha)$ $\tan(270-\alpha)=\cot(\alpha)$	$\operatorname{sen}(270+\alpha)=-\cos(\alpha)$ $\cos(270+\alpha)=\operatorname{sen}(\alpha)$ $\tan(270+\alpha)=-\cot(\alpha)$

8. Razones de los ángulos fundamentales

	0^o	$30^o=\frac{\pi}{6}$	$45^o=\frac{\pi}{4}$	$60^o=\frac{\pi}{3}$	$90^o=\frac{\pi}{2}$	$180^o=\pi$	$270^o=\frac{3\pi}{2}$	$360^o=2\pi$
sen	0	$1/2$	$\sqrt{2}/2$	$\sqrt{3}/2$	1	0	-1	0
cos	1	$\sqrt{3}/2$	$\sqrt{2}/2$	$1/2$	0	-1	0	1
tan	0	$\sqrt{3}/3$	1	$\sqrt{3}$	$\nexists$	0	$\nexists$	0

9. Triángulos rectángulos



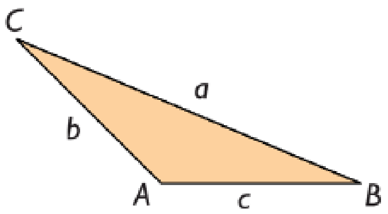
$$\widehat{A} = 90 \qquad \operatorname{sen} \widehat{B} = \frac{b}{a}$$

$$\widehat{B} + \widehat{C} = 90 \qquad \cos \widehat{B} = \frac{c}{a}$$

$$\widehat{A} + \widehat{B} + \widehat{C} = 180 \qquad \tan \widehat{B} = \frac{b}{a}$$

Teorema de Pitágoras: $a^2 = b^2 + c^2$

10. Triángulos oblicuángulos



$$\widehat{A} + \widehat{B} + \widehat{C} = 180$$

Teorema de los senos

$$\frac{a}{\operatorname{sen} \widehat{A}} + \frac{b}{\operatorname{sen} \widehat{B}} + \frac{c}{\operatorname{sen} \widehat{C}}$$

Teorema del coseno

$$a^2 = b^2 + c^2 - 2 \cdot b \cdot c \cdot \cos \widehat{A}$$

$$b^2 = a^2 + c^2 - 2 \cdot a \cdot c \cdot \cos \widehat{B}$$

$$c^2 = a^2 + b^2 - 2 \cdot a \cdot b \cdot \cos \widehat{C}$$