

IDENTIDADES TRIGONOMÉTRICAS

Demostrar las siguientes igualdades trigonométricas pasando a *senos* y/o *cosenos*.

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| 1) $\operatorname{sen}^2 x + \frac{1}{\sec^2 x} = \operatorname{sen} x \csc x$ | 2) $\frac{1}{\csc^2 x} + \cos^2 x = 1$ |
| 3) $\tan^2 x + \operatorname{sen} x \csc x = \sec^2 x$ | 4) $\frac{\cos^2 x}{\operatorname{sen}^2 x} + \tan x \cot x = \csc^2 x$ |
| 5) $\operatorname{sen}^2 x + \cos^2 x = \cos x \sec x$ | 6) $\tan^2 x + \tan x \cot x = \sec^2 x$ |
| 7) $\sec^2 x \csc^2 x = \sec^2 x + \csc^2 x$ | 8) $\sec x + \csc x = \sec x \csc x (\operatorname{sen} x + \cos x)$ |
| 9) $\tan^2 x \cos^2 x + \cos^2 x = \frac{1}{\csc^2 x} + \frac{1}{\sec x}$ | 10) $\sec x + \cos^2 x = \frac{1}{\cos x} + \frac{1}{\sec^2 x}$ |
| 11) $\frac{1}{\cos x \csc x} = \tan x$ | 12) $\cos x \csc x = \cot x$ |
| 13) $\frac{1}{\operatorname{sen} x \sec x} = \cot x$ | 14) $\cot^2 x + \frac{1}{\tan x \cot x} = \csc^2 x$ |
| 15) $\cot^2 x + \frac{1}{\cos x \sec x} = \csc^2 x$ | 16) $\operatorname{sen}^2 x + \cos^2 x = \sec^2 x - \tan^2 x$ |
| 17) $\tan^2 x + \frac{1}{\operatorname{sen} x \csc x} = \sec^2 x$ | 18) $\cot^2 x + \operatorname{sen}^2 x + \cos^2 x = \csc^2 x$ |

Demostrar las siguientes igualdades trigonométricas empleando cualquiera de todas las técnicas estudiadas.

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| 1) $\frac{\operatorname{sen} x}{\csc x} + \frac{\cos x}{\sec x} = 1$ | 2) $\frac{\sec x}{\tan x + \cot x} = \operatorname{sen} x$ |
| 3) $\frac{1 - \operatorname{sen} x}{\cos x} = \frac{\cos x}{1 + \operatorname{sen} x}$ | 4) $\frac{1 - \cos x}{\operatorname{sen} x} = \frac{\operatorname{sen} x}{1 + \cos x}$ |
| 5) $\frac{1}{\sec - \tan x} = \sec x + \tan x$ | 6) $\frac{1}{\csc x - \cot x} = \csc x + \frac{1}{\tan x}$ |
| 7) $\frac{\cot^2 x}{\csc x - 1} = \csc x + \operatorname{sen}^2 x + \cos^2 x$ | 8) $\frac{\tan x - \operatorname{sen} x}{\operatorname{sen}^3 x} = \frac{\sec x}{1 + \cos x}$ |
| 9) $\tan x + \cot x = \frac{1}{\operatorname{sen} x \cos x}$ | 10) $\sec x + \cos^2 x = \frac{1}{\cos x} + \frac{1}{\sec^2 x}$ |
| 11) $\frac{\csc x}{\tan x + \cot x} = \cos x$ | 12) $(1 - \operatorname{sen}^2 x)(1 + \tan^2 x) = 1$ |
| 13) $\frac{1}{1 + \operatorname{sen} x} + \frac{1}{1 - \operatorname{sen} x} = 2 \sec^2 x$ | 14) $\operatorname{sen} x + \cos x = \cos x(1 + \tan x)$ |
| 15) $\cot^2 x + \frac{1}{\cos x \sec x} = \csc^2 x$ | 16) $\frac{\operatorname{sen}^2 x + \cos^2 x}{\sec x + \tan x} = \sec x - \tan x$ |
| 17) $\tan^2 x + \frac{1}{\operatorname{sen} x \csc x} = \sec^2 x$ | 18) $\cot^2 x + \operatorname{sen}^2 x = \csc^2 x - \cos^2 x$ |