

Trigonometría

Resuelve las siguientes igualdades trigonométricas:

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

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

Resuelve las siguientes ecuaciones trigonométricas:

1. $4 \cos^2 x - 3 = 0$
2. $16 \cos^4 \varphi - 9 = 0$
3. $2 \operatorname{sen}^2 x = -\operatorname{sen} x$
4. $2 \cos^2 x = \operatorname{sen} x - 1$
5. $\frac{\tan x}{\cot x} = 1$
6. $2 \operatorname{sen} \theta + \cos^2 \theta = \frac{7}{4}$
7. $2 \operatorname{sen} x - 1 = 0$
8. $\operatorname{sen} x \cdot \cos x = 0$
9. $(\tan x - 1)(4 \operatorname{sen}^2 x - 3) = 0$
10. $3 \cos^2 x = \operatorname{sen}^2 x$
11. $2 \operatorname{sen} x - \operatorname{csc} x = 1$
12. $2 \sec \theta = \tan \theta + \cot \theta$
13. $\sec^2 x - 4 = 0$
14. $\sqrt{3} + 2 \operatorname{sen} \theta = 0$
15. $\cot^2 x - 3 = 0$
16. $(2 \operatorname{sen} \phi + 1)(2 \cos \phi + 3) = 0$
17. $2 - 8 \cos^2 \mu = 0$
18. $2 \operatorname{sen}^2 \theta = 1 - \operatorname{sen} \theta$
19. $\tan^2 x \cdot \operatorname{sen} x = \operatorname{sen} x$
20. $2 \cos^2 \phi + \cos \phi = 0$
21. $\operatorname{sen}^2 \theta + \operatorname{sen} \theta - 6 = 0$
22. $2 \cos^3 \theta - \cos \theta = 0$
23. $2 \cos \phi + \tan \phi = \sec \phi$
24. $\operatorname{sen} \psi = \tan$
25. $\sec^5 \alpha = 4 \sec \alpha$
26. $\cos \theta \cot^2 \theta = \cos \theta$
27. $3 \operatorname{sen} \beta = 2 \cos^2 \beta$
28. $\operatorname{sen} \phi + \cos^2 \phi = \frac{1}{4}$
29. $\operatorname{sen}^4 \phi - \cos^4 \phi = \frac{1}{2}$
30. $4 \cos \psi \operatorname{sen} \psi + 2 \operatorname{sen} \psi - 2 \cos \psi - 1 = 0$
31. $4 \operatorname{sen}^2 \alpha + 8 \operatorname{sen} \alpha + 3 = 0$
32. $\cos^2 \epsilon - \operatorname{sen}^2 \epsilon + \cos \epsilon + 1 = 0$
33. $\operatorname{sen} \delta = \sqrt{3} \cos \delta - 1$
34. $3 \operatorname{sen} \rho \cos \rho - \operatorname{sen} \rho = 0$
35. $\operatorname{sen}^2 \gamma - \cos^2 \gamma = \frac{1}{2}$
36. $\operatorname{sen}^2 \chi - \cos \chi = \frac{1}{4}$
37. $\operatorname{csc} \omega = 1 + \cot^2 \omega$
38. $2 \cos \mu = \tan \mu + \sec \mu$
39. $2 \cos^2 \chi \operatorname{sen}^2 \chi - \cos \chi \operatorname{sen} \chi = 0$
40. $\cos^2 \chi - 3 \operatorname{sen} \chi + 3 \operatorname{sen}^2 \chi = 0$
41. $1 - \operatorname{sen} \theta = \sqrt{3} \cos \theta$
42. $\cos \alpha + \operatorname{sen} \alpha = 1$
43. $\cos \theta - \operatorname{sen} \theta = 1$
44. $2 \tan \beta - \sec^2 \beta = 0$
45. $\tan \chi + \sec \chi = 1$
46. $\sec \chi + \tan \chi = 0$
47. $2 \operatorname{sen}^3 \chi + \operatorname{sen}^2 \chi - 2 \operatorname{sen} \chi - 1 = 0$
48. $2 \tan \kappa \operatorname{csc} \kappa + 2 \operatorname{csc} \kappa + \tan \kappa + 1 = 0$
49. $2 \operatorname{sen} \chi \operatorname{csc} \chi - \operatorname{csc} \chi = 4 \operatorname{sen} \chi - 2$
50. $\operatorname{sen} \alpha - \cos \alpha = 0$
51. $12 \operatorname{sen}^2 \mu - 5 \operatorname{sen} \mu - 2 = 0$
52. $\operatorname{csc} \alpha + \cot \alpha = \sqrt{3}$
53. $\cos \kappa - \sqrt{3} \operatorname{sen} \kappa = 1$
54. $2 \cos \chi = 1 - \operatorname{sen} \chi$
55. $2 \cos x + 3 \operatorname{sen} x = 2$
56. $3 \operatorname{sen} x + 5 \cos x + 5 = 0$
57. $1 + \operatorname{sen} x = 2 \cos x$
58. $3 \operatorname{sen} x + 4 \cos x = 2$
59. $\operatorname{sen} 3x = \frac{-\sqrt{2}}{2}$
60. $\cos \frac{x}{2} = \frac{1}{2}$
61. $\operatorname{sen} 2x = \frac{-\sqrt{3}}{2}$
62. $\tan 3x = 1$
63. $\cos \frac{x}{2} = \frac{\sqrt{3}}{2}$
64. $\operatorname{sen} 2x = \cos 2x$
65. $\operatorname{sen} 2x = \cos 4x$
66. $\operatorname{sen} 3x = \cos 2x$
67. $\tan 4x = \cot 6x$