

Tema	Trigonometria
Conteúdos	Equações Trigonométricas
Ficha de trabalho	Enunciado

Ex 01.

Determina os seguintes limites:

1.1. $\sin(x) = \frac{1}{2}$

1.2. $2\sin(3x) + \sqrt{3} = 0$

1.3. $-5\sin(x) = 0$

1.4. $\sin\left(2x - \frac{\pi}{3}\right) = \frac{\sqrt{3}}{2}$

1.5. $\sin^2(x) - 1 = 0$

1.6. $\sin^2(x) - 3\sin(x) + 2 = 0$

1.7. $\sin(x) + \sin\left(\frac{\pi}{3}\right) = 0$

1.8. $\cos(x) = \cos\left(\frac{\pi}{3}\right)$

1.9. $\cos\left(2x + \frac{\pi}{6}\right) = -\frac{\sqrt{3}}{2}$

1.10. $3\cos\left(x + \frac{\pi}{3}\right) = 3$

1.11. $\cos(x) = 3$

1.12. $5 - 5\cos^2(x) = 0$

1.13. $2\sin(5x) = \sqrt{3}$

1.14. $\sin^3(x) - 2\sin^2(x) - 3\sin(x) = 0$

1.15. $\cos^2\left(2x + \frac{2}{3}\right) = \frac{1}{4}$

1.16. $x\tg(x) + x = 0$

1.17. $4\cos^2(x) - 12\cos(x) + 5 = 0$

1.18. $\tg\left(x - \frac{\pi}{4}\right) = 1$

1.19. $\sin(4x) + \sin(x) = 0$

1.20. $\sin(x) - \tg(x) = 0$

1.21. $\sin(2x) = \cos(x)$

1.22. $\sin(\pi x) = 0$

1.23. $\cos(\pi x) = 1$

1.24. $2\sin(y) = \cos\left(y - \frac{\pi}{6}\right)$

1.25. $\sin(2x) - 2\cos^2(x) = 0$

1.26. $\sin(2x) + \cos(x) = 0$

1.27. $\sqrt{3}\sin(x) + \cos(x) = \sqrt{3}$

1.28. $\sin(x)\cos\left(\frac{\pi}{9}\right) + \sin\left(\frac{\pi}{9}\right)\cos(x) = 0$

1.29. $\sin^2\left(x + \frac{\pi}{4}\right) - \cos^2\left(x + \frac{\pi}{4}\right) = \sin(x)$

1.30. $\sqrt{3}\cos\left(x + \frac{\pi}{4}\right) - \cos(x) = \cos(2x)$

DISCIPLINA: Matemática A

ANO: 12º

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1.31. $\frac{1 - \operatorname{tg}x}{1 + \operatorname{tg}x} = \sqrt{3}$

1.32 $2\sin^2 x - \sin(x) = 0$

1.33 $\sin x(2\cos x + 1) = 0$

1.34. $2\sin^2 x - 3\sin(x) = -1$ **1.35** $2\sin x = 2 - \cos^2 x$

Ficha de trabalho**Solucionário**

1.1. $x = \frac{\pi}{6} + 2k\pi \vee x = \frac{5\pi}{6} + 2k\pi, k \in \mathbb{Z}$

1.2. $x = \frac{4\pi}{9} + \frac{2k\pi}{3} \vee x = -\frac{\pi}{9} + \frac{2k\pi}{3}, k \in \mathbb{Z}$

1.3. $x = k\pi, k \in \mathbb{Z}$

1.4. $x = \frac{\pi}{3} + k\pi \vee x = \frac{\pi}{2} + k\pi, k \in \mathbb{Z}$

1.5. $x = \frac{\pi}{2} + 2k\pi \vee x = \frac{3\pi}{2} + 2k\pi, k \in \mathbb{Z}$

1.6. $x = \frac{\pi}{2} + 2k\pi, k \in \mathbb{Z}$

1.7. $x = -\frac{\pi}{3} + 2k\pi \vee x = \frac{4\pi}{3} + 2k\pi, k \in \mathbb{Z}$

1.8. $x = \frac{\pi}{3} + 2k\pi \vee x = -\frac{\pi}{3} + 2k\pi, k \in \mathbb{Z}$

1.9. $x = \frac{\pi}{3} + k\pi \vee x = \frac{\pi}{2} + k\pi, k \in \mathbb{Z}$

1.10. $x = -\frac{\pi}{3} + 2k\pi, k \in \mathbb{Z}$

1.11. Equação impossível

1.12. $x = 2k\pi \vee x = \pi + 2k\pi, k \in \mathbb{Z}$

1.13. $x = \frac{\pi}{15} + \frac{2k\pi}{5} \vee x = \frac{2\pi}{15} + \frac{2k\pi}{5}, k \in \mathbb{Z}$

1.14. $x = k\pi \vee x = \frac{3\pi}{2} + 2k\pi, k \in \mathbb{Z}$

1.15. $x = \frac{\pi-2}{6} + k\pi \vee x = \frac{-\pi-2}{6} + k\pi \vee x = \frac{\pi-1}{3} + k\pi \vee x = \frac{2\pi-1}{3} + k\pi, k \in \mathbb{Z}$

1.16. $x = 0 \vee x = \frac{3\pi}{4} + k\pi, k \in \mathbb{Z}$

1.17. $x = \frac{\pi}{3} + 2k\pi \vee x = -\frac{\pi}{3} + 2k\pi, k \in \mathbb{Z}$

1.18. $x = \frac{\pi}{2} + k\pi, k \in \mathbb{Z}$

1.19. $x = \frac{2k\pi}{5} \vee x = \frac{\pi}{3} + \frac{2k\pi}{3}, k \in \mathbb{Z}$

1.20. $x = k\pi \vee x = \pi + 2k\pi, k \in \mathbb{Z}$

1.21. $x = \frac{\pi}{2} + k\pi \vee x = \frac{\pi}{6} + 2k\pi \vee x = \frac{5\pi}{6} + 2k\pi, k \in \mathbb{Z}$

1.22. $x = k, k \in \mathbb{Z}$

1.23. $x = 2k, k \in \mathbb{Z}$

1.24. $y = \frac{\pi}{6} + k\pi, k \in \mathbb{Z}$

1.25. $x = \frac{\pi}{2} + k\pi \vee x = \frac{\pi}{4} + k\pi, k \in \mathbb{Z}$

1.26. $x = \frac{\pi}{2} + k\pi \vee x = \frac{7\pi}{6} + 2k\pi \vee x = -\frac{\pi}{6} + 2k\pi, k \in \mathbb{Z}$

1.27. $x = \frac{\pi}{6} + 2k\pi \vee x = \frac{\pi}{2} + 2k\pi, k \in \mathbb{Z}$

1.28. $x = \frac{\pi}{18} + 2k\pi \vee x = \frac{13\pi}{18} + 2k\pi, k \in \mathbb{Z}$

1.29. $x = 2k\pi \vee x = \frac{\pi}{3} + \frac{2k\pi}{3}, k \in \mathbb{Z}$

1.30. $x = \frac{\pi}{2} + 2k\pi \vee x = -\frac{\pi}{6} + \frac{2k\pi}{2}, k \in \mathbb{Z}$

1.31. $x = -\frac{\pi}{12} + k\pi, k \in \mathbb{Z}$

1.32. $x = k\pi \vee x = \frac{\pi}{6} + 2k\pi \vee x = \frac{5\pi}{6} + 2k\pi, k \in \mathbb{Z}$

1.33. $x = k\pi \vee x = \frac{2\pi}{3} + 2k\pi \vee x = \frac{4\pi}{3} + 2k\pi, k \in \mathbb{Z}$

1.34. $x = \frac{\pi}{2} + 2k\pi \vee x = \frac{\pi}{6} + 2k\pi \vee x = \frac{5\pi}{6} + 2k\pi, k \in \mathbb{Z}$

1.35. $x = \frac{\pi}{2} + 2k\pi, k \in \mathbb{Z}$