

Aluno (a):

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Série: 1º ano

LISTA DE REVISÃO PARA A PROVA BIMESTRAL – 1º ANO

1) Utilize as fórmulas de adição e subtração de arcos e calcule:

a) $\cos 105^\circ$ b) $\operatorname{tg} 75^\circ$ c) $\operatorname{sen} 75^\circ$ d) $\operatorname{sen} 120^\circ$ e) $\cos 105^\circ$ 2) Se $\operatorname{tg}(a-b) = 0,98$ e $\operatorname{tgb} = 1$, calcule tga .3) (PUC) Se $\operatorname{tg} \alpha = \frac{1}{3}$, calcular $\operatorname{tg} 2\alpha$.4) (PUC) Se $\operatorname{tg}(x+y) = 33$ e $\operatorname{tg} x = 3$, determine o valor de $\operatorname{tg} 2y$.5) Dado $\operatorname{sen} a = \frac{2}{3}$, com $0 < a < \frac{\pi}{2}$, determine $\operatorname{sen} 2a$, $\cos 2a$ e $\operatorname{tg} 2a$.

6) Fatore as expressões:

a) $\operatorname{sen} 80^\circ + \operatorname{sen} 20^\circ$ b) $\cos 60^\circ + \cos 30^\circ$ c) $\cos 50^\circ - \cos 20^\circ$

7) Simplifique a expressão:

$$\frac{\operatorname{sen} 80^\circ + \operatorname{sen} 20^\circ}{\operatorname{sen} 50^\circ}$$

8) Escreva as expressões gerais de cada arco:

a) 240° b) 3678° c) 1386° d) $\frac{17\pi}{4}$

9) Resolva as equações. (U=R)

a) $\cos^2 x = 1$.b) $2\cos x - \sqrt{3} = 0$.c) $2\operatorname{sen}^2 x + 3\operatorname{sen} x - 2 = 0$.d) $\operatorname{sen} x = 1/2$ e) $\cos x = 1/2$ f) $2(\cos^2 x + 1) = 5 \cos x$

g) $\text{tg } x = -1$

10) Resolva a equação $\cos x = -\frac{1}{2}$ no intervalo $\left]0, \frac{3\pi}{2}\right]$.

Fórmulas:

- Transformação em Produto:

$$\boxed{\text{sen } p + \text{sen } q = 2 \cdot \text{sen}\left(\frac{p+q}{2}\right) \cdot \cos\left(\frac{p-q}{2}\right)}$$

$$\boxed{\text{sen } p - \text{sen } q = 2 \cdot \text{sen}\left(\frac{p-q}{2}\right) \cdot \cos\left(\frac{p+q}{2}\right)}$$

$$\boxed{\cos p + \cos q = 2 \cdot \cos\left(\frac{p+q}{2}\right) \cdot \cos\left(\frac{p-q}{2}\right)}$$

$$\boxed{\cos p - \cos q = -2 \cdot \text{sen}\left(\frac{p+q}{2}\right) \cdot \text{sen}\left(\frac{p-q}{2}\right)}$$

Adição e subtração de arcos:

$$\begin{aligned}\text{sen}(a + b) &= \text{sen}(a) \cdot \cos(b) + \cos(a) \cdot \text{sen}(b) \\ \text{sen}(a - b) &= \text{sen}(a) \cdot \cos(b) - \cos(a) \cdot \text{sen}(b)\end{aligned}$$

$$\begin{aligned}\cos(a + b) &= \cos(a) \cdot \cos(b) - \text{sen}(a) \cdot \text{sen}(b) \\ \cos(a - b) &= \cos(a) \cdot \cos(b) + \text{sen}(a) \cdot \text{sen}(b)\end{aligned}$$

$$\text{tg}(a + b) = \frac{\text{tg}(a) + \text{tg}(b)}{1 - \text{tg}(a) \cdot \text{tg}(b)}$$

$$\text{tg}(a - b) = \frac{\text{tg}(a) - \text{tg}(b)}{1 + \text{tg}(a) \cdot \text{tg}(b)}$$

- Arco duplo:

$$\text{sen}(2x) = 2 \cdot \text{sen}(x) \cdot \cos(x)$$

$$\cos(2x) = \cos^2(x) - \text{sen}^2(x)$$

$$\text{tg}(2x) = \frac{2 \cdot \text{tg}(x)}{1 - \text{tg}^2(x)}$$