LUYỆN TẬP CHUNG

Giải các phương trình sau:

1) $\cos 2x = (1+2\cos x)(\cos x - \sin x)$.

2) $(1+\sin x)^2 = \cos^3 x$.

3) $\sin x + \sin 2x + \sin 3x + \sin 4x = 0$.

4) $\cos 10x - \cos 8x - \cos 6x + 1 = 0$.

5) $\sin 4x = 2\cos^2 x - 1$.

6) $1 + \sin x + \cos x + \sin 2x + \cos 2x = 0$.

7) $(1-\tan x)(1+\sin 2x) = 1+\tan x$.

8) $(1+2\sin x)^2 \cos x = 1 + \sin x + \cos x$.

9) $(2\sin x - 1)(2\cos x + \sin x) = \sin 2x - \cos x$.

10) $\cos^4 \dfrac{x}{2} - \sin^4 \dfrac{x}{2} = \sin 2x$.

11) $\sin 2x - \cos 2x = 1 + \sqrt{2}(\sin 2x + \sin 4x)$.

12) $2\sin^2 2x + \sin 7x - 1 = \sin x$.

13) $2\sin x \cos 2x + \sin 2x \cos x = \sin 4x \cos x$.

14) $\sqrt{3}\sin x + \cos x = \dfrac{1}{\cos x}$.

15) $2(\sin x + 1)(2 - \cos^2 2x - 3\sin x) = \sin 4x.\cos x$.

16) $2\cos^2 x - 2\sqrt{3}\sin x \cos x + 1 = \sqrt{3}\left(\sqrt{3}\cos x - \sin x\right)$.

17) $4\cos^2 x + 3\tan^2 x - 4\sqrt{3}\cos x + 2\sqrt{3}\tan x + 4 = 0$.

18) $\sin^3 x + \cos^3 x = \sin x - \cos x$.

19) $8\cos^4 x - \cos 4x = 1$.

20) $\sin^2 2x + \sin^2 4x = \dfrac{3}{2}$.

21) $4(\cos^3 x + \sin^3 x) = \cos x + 3\sin x$.

22) $4\sin^3 x + 4\sin^2 x + 3\sin 2x + 6\cos x = 0$.

23) $\left(2\sin^2 x - 1\right)\tan^2 2x + 3\left(2\cos^2 x - 1\right) = 0$.

24) $\dfrac{\cos^2 x(\cos x - 1)}{\sin x + \cos x} = 2(1+\sin x)$.

25) $\tan x - 2\sqrt{2}\sin x = 1$.

26) $\tan x + \tan 2x = \sin 3x \cos x$.

27) $4\sqrt{3}\sin x \cos x \cos 2x = \sin 8x$.

28) $\sin\left(2x + \dfrac{5\pi}{2}\right) - 3\cos\left(x - \dfrac{7\pi}{2}\right) = 1 + \sin x$.

29) $\tan x - 3\cot x = 4\left(\sin x + \sqrt{3}\cos x\right)$.

30) $\dfrac{\sin^4 x + \cos^4 x}{\sin 2x} = \dfrac{1}{2}(\tan x + \cot x)$.

31) $\dfrac{\sin 3x}{\sin x} + \dfrac{\cos 3x}{\cos x} = \sqrt{2}\sin\left(x + \dfrac{\pi}{4}\right)$.

32) $\sin^3 x + 3\cos x = 3\sin^2 x \cos x + 2\sin x$.

33) $\cos 3x = \cos x + \sin x$.

34) $\sin 3x = 64\sin^9 x - 27\sin^3 x$.

35) $\dfrac{8}{\sin^3 2x} + \cot x = \tan^3 x$.

36) $2\cos\left(x - \dfrac{\pi}{3}\right) + \cos x + 4\sin x = 2$.