Priprema za ispit znanja – Trigonometrijske jednadžbe i nejednadžbe – RM 18

1. $2\sin^2 x + 2 = 5\sin x$ **Rj:** $x_1 = \frac{\pi}{6} + 2k\pi, x_2 = \frac{5\pi}{6} + 2k\pi, k \in Z$

2. $4\sin^2 x + \sin x \cos x + \cos^2 x = 3$ **Rj:** $x_1 = -63°26'6'' + k \cdot 180°, x_2 = \frac{\pi}{4} + k\pi, k \in Z$

3. $4\cos^2 x = 1 + 4\sin x$ **Rj:** $x_1 = \frac{\pi}{6} + 2k\pi, x_2 = \frac{5\pi}{6} + 2k\pi, k \in Z$

4. $3\sin x + \sqrt{3}\cos x = 0$ **Rj:** $x_1 = -\frac{\pi}{6} + k\pi, k \in Z$

5. $\sin 2x = \cos^2 x$ **Rj:** $x_1 = 26°33'54'' + k \cdot 180°, k \in Z$

6. $\sin 2x + 2\cos x = 1 + \sin x$ **Rj:** $x_1 = -\frac{\pi}{2} + 2k\pi, x_{2,3} = \pm\frac{\pi}{3} + 2k\pi, k \in Z$

7. $\sin\left(x + \frac{\pi}{6}\right) + \cos\left(\frac{\pi}{3} + x\right) = 1 + \cos 2x$ **Rj:** $x_1 = \frac{\pi}{2} + k\pi, x_2 = \pm\frac{\pi}{3} + 2k\pi, k \in Z$

8. $\sin x \cos 4x = \sin 5x$ **Rj:** $x_1 = \frac{\pi}{2} + k\pi, x_2 = \frac{k\pi}{4}, k \in Z$

9. $\sin x + \sin 3x + \sin 5x = 0$ **Rj:** $x_1 = \frac{k\pi}{3}, x_{2,3} = \pm\frac{\pi}{3} + k\pi, k \in Z$

10. $\mathrm{tg}^2 3x - \mathrm{tg} 3x = 0$ **Rj:** $x_1 = \frac{k\pi}{3}, x_2 = \frac{\pi}{12} + \frac{k\pi}{3}, k \in Z$

11. $\sin 7x = \sin 3x$ **Rj:** $x_1 = \frac{k\pi}{2}, x_2 = \frac{\pi}{10} + \frac{k\pi}{5}, k \in Z$

12. $\sin^2 x + \sin^2 2x = 1$ **Rj:** $x_1 = \frac{\pi}{2} + k\pi, x_{2,3} = \pm\frac{\pi}{3} + k\pi, k \in Z$

13. $\sin^2 x + 2\sin x \geq 0$ **Rj:** $2k\pi \leq x \leq \pi + 2k\pi, k \in Z$

14. $2\cos^2 x + 3\cos x < -1$ **Rj:** $\frac{2\pi}{3} + 2k\pi < x < \frac{4\pi}{3} + 2k\pi \setminus \{\pi + 2k\pi\}, k \in Z$

15. $8 - 3\mathrm{tg} 2x \geq 0$ **Rj:** $-45° + k \cdot 90° \leq x \leq 34°43'19' + k \cdot 90°, k \in Z$