

B.

1. Řešte goniometrickou rovnici:

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

$$2x - \frac{\pi}{4} = t \quad //2$$

$$\cos t = -\frac{\sqrt{2}}{2} \quad //2$$

$$2x - \frac{\pi}{4} = \frac{3}{4}\pi + 2k\pi \quad //2$$

$$2x - \frac{\pi}{4} = \frac{5}{4}\pi + 2k\pi \quad //2 \quad t_1 =$$

$$2x = \frac{4}{4}\pi + 2k\pi \quad | :2$$

$$2x = \frac{6}{4}\pi + 2k\pi \quad | :2$$

$$x_1 = \frac{\pi}{2} + k\pi \quad 1$$

$$x_2 = \frac{6}{8}\pi + k\pi$$

$$x_2 = \frac{3}{4}\pi + k\pi \quad 1$$

$$K = \left\{ \frac{3}{4}\pi + k\pi; \frac{\pi}{2} + k\pi \right\} \quad //2$$

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2. Řešte goniometrickou rovnici:

$$2 \cos^2 x + 3 \sin x = 0$$

$$\cos^2 x = 1 - \sin^2 x \quad //2$$

$$2(1 - \sin^2 x) + 3 \sin x = 0 \quad //2$$

$$2 - 2 \sin^2 x + 3 \sin x = 0 \quad //2 \quad \sin x = t \quad //2$$

$$-2t^2 + 3t + 2 = 0 \quad //2$$

$$\sin x = t$$

$$\sin x = 2 \quad //2$$

$$\emptyset \quad //2$$

$$\sin x = -\frac{1}{2} \quad //2$$

$$x_1 = \frac{\pi}{6} \quad //2$$

$$\text{III. } x_1 = \frac{4}{6}\pi + 2k\pi \quad 1$$

$$\text{IV. } x_2 = \frac{11}{6}\pi + 2k\pi$$

$$K = \left\{ \frac{4}{6}\pi + 2k\pi; \frac{11}{6}\pi + 2k\pi \right\} \quad //2$$

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3. Řešte goniometrickou rovnici:

$$\sin x = \sin \pi - \cos \frac{\pi}{3}$$

$$\sin x = 0 - \frac{1}{2} \quad 1$$

$$\sin x = -\frac{1}{2} \quad //2 \quad x_1 = \frac{\pi}{6} \quad //2$$

$$x_1 = \frac{4}{6}\pi + 2k\pi \quad 1$$

$$x_2 = \frac{11}{6}\pi + 2k\pi$$

$$K = \left\{ \frac{4}{6}\pi + 2k\pi; \frac{11}{6}\pi + 2k\pi \right\} \quad //2$$

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A.

1. Řešte goniometrickou rovnici:

$$\sin\left(2x - \frac{\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$

$$2x - \frac{\pi}{4} = t \quad //2$$

$$\sin t = -\frac{\sqrt{2}}{2} \quad //2$$

$$2x - \frac{\pi}{4} = \frac{5}{4}\pi + 2k\pi \quad //2$$

$$2x - \frac{\pi}{4} = \frac{4}{4}\pi + 2k\pi \quad //2$$

$$\text{III. } t_1 = \frac{5}{4}\pi + 2k\pi \quad 1$$

$$2x = \frac{6}{4}\pi + 2k\pi \quad | :2$$

$$2x = \frac{4}{4}\pi + 2k\pi \quad | :2$$

$$\text{IV. } t_2 = \frac{4}{4}\pi + 2k\pi$$

$$x_1 = \frac{6}{8}\pi + k\pi$$

$$x_1 = \pi + k\pi \quad 1$$

$$x_1 = \frac{3}{4}\pi + k\pi \quad 1$$

$$K = \left\{ \frac{3}{4}\pi + k\pi; \pi + k\pi \right\} \quad //2$$

66

2. Řešte goniometrickou rovnici:

$$2 \sin^2 x + 3 \cos x = 0$$

$$\sin^2 x = 1 - \cos^2 x \quad //2$$

$$2(1 - \cos^2 x) + 3 \cos x = 0 \quad //2$$

$$2 - 2 \cos^2 x + 3 \cos x = 0 \quad //2$$

$$\cos x = t \quad //2$$

$$-2t^2 + 3t + 2 = 0 \quad //2 \quad \Delta = 25$$

$$D = 3^2 - 4 \cdot (-2) \cdot 2 = 25$$

$$\sqrt{D} = 5$$

$$t_{1,2} = \frac{-3 \pm 5}{2 \cdot (-2)} = \left\{ \frac{-2}{-4} = \frac{1}{2}; \frac{-8}{-4} = 2 \right\}$$

$$\cos x = 2 \quad //2$$

$$\emptyset \quad //2$$

$$\cos x = -\frac{1}{2} \quad //2$$

$$x_1 = \frac{\pi}{3} \quad //2$$

$$\text{II. } x_1 = \frac{2}{3}\pi + 2k\pi \quad 1$$

$$\text{III. } x_2 = \frac{4}{3}\pi + 2k\pi$$

$$K = \left\{ \frac{2}{3}\pi + 2k\pi; \frac{4}{3}\pi + 2k\pi \right\} \quad //2$$

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3. Řešte goniometrickou rovnici:

$$\cos x = \cos \frac{\pi}{2} - \sin \frac{\pi}{3}$$

$$\cos x = 0 - \frac{\sqrt{3}}{2} \quad 1$$

$$\cos x = -\frac{\sqrt{3}}{2} \quad //2 \quad x_1 = \frac{\pi}{6} \quad //2$$

$$\text{II. } x_1 = \frac{5}{6}\pi + 2k\pi \quad 1$$

$$\text{III. } x_2 = \frac{4}{6}\pi + 2k\pi$$

$$K = \left\{ \frac{5}{6}\pi + 2k\pi; \frac{4}{6}\pi + 2k\pi \right\} \quad //2$$

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