

Vyřešte v $\mathbb{R}$ rovnici, proveďte zkoušku

$$1. \begin{vmatrix} \sqrt{x} & 1 & -2 \\ \sqrt{x} & 1 & -2\sqrt{x} \\ -1 & 1 & 1 \end{vmatrix} = 6.$$

$$2. \begin{vmatrix} e^x & 1 & 2 \\ 0 & 1 & 2e^x \\ 1 & 1 & e^x \end{vmatrix} = -1.$$

$$3. \begin{vmatrix} \sin x & 1 & 1 \\ 2 & 1 & \sin x \\ 1 & 2 & 1 \end{vmatrix} = 1.$$

$$4. \begin{vmatrix} 1 & x & x \\ 1 & 0 & 2 \\ x^2 + 1 & 1 & 2 \end{vmatrix} = 9x - 2.$$

$$5. \begin{vmatrix} \sqrt{x} & 0 & -2 \\ 2 & \sqrt{x} & \sqrt{x} \\ 0 & 1 & 1 \end{vmatrix} = 1.$$

$$6. \begin{vmatrix} x^2 & 1 & -1 \\ x & 1 & 2 \\ 1 & 1-x & 2 \end{vmatrix} = 4 - x.$$

$$7. \begin{vmatrix} 2 & 2e^x & 1 \\ 0 & 3 & e^x \\ 1 & 2 & e^x \end{vmatrix} = 1.$$

$$8. \begin{vmatrix} 2e^x & -1 & 2 \\ e^x & 2 & 2 \\ 2 & 1 & 3e^x \end{vmatrix} = e^x.$$

$$9. \begin{vmatrix} 1 & 0 & 1-x^2 \\ 2 & 1 & 2 \\ 1+x^2 & 1 & 2 \end{vmatrix} = 1.$$

$$10. \begin{vmatrix} \sqrt{x} & 0 & -2 \\ 1 & 1 & 2\sqrt{x} \\ 0 & -1 & 2 \end{vmatrix} = 2.$$

$$11. \begin{vmatrix} 1 & \sin x & -2 \\ 0 & 1 & \sin x \\ \sin x & 0 & 1 \end{vmatrix} = 2 \sin x.$$

$$12. \begin{vmatrix} 3\sqrt{x} & 1 & 3 \\ 2\sqrt{x} & 1 & 2 \\ 2 & 1 & \sqrt{x} \end{vmatrix} = -6.$$

$$13. \begin{vmatrix} \sqrt{x-1} & 1 & -2 \\ \sqrt{x+1} & 1 & 0 \\ -1 & 1 & 0 \end{vmatrix} = -2.$$

$$14. \begin{vmatrix} 1 & x & x^2 \\ 2 & 1 & x \\ 1-x & -1 & 2 \end{vmatrix} = -6x.$$

$$15. \begin{vmatrix} 3x & 2 & 1 \\ 2x & 1 & 3 \\ 1 & 3x & 2 \end{vmatrix} = 17x^2 + 7x + 5.$$

$$16. \begin{vmatrix} 2 & e^x & 5 \\ 0 & 3 & e^{-x} \\ 1 & 2 & 3 \end{vmatrix} = 0.$$

$$17. \begin{vmatrix} 2 & 2e^{-x} & 1 \\ 0 & 3 & e^x \\ 1 & 2 & e^x \end{vmatrix} = 1.$$

$$18. \begin{vmatrix} \sin x & 1 & -1 \\ 2 & 1 & 2 \\ 1 & -\sin x & 0 \end{vmatrix} = 3.$$

$$19. \begin{vmatrix} 3e^x & 2 & -1 \\ 2e^x & 2 & 1 \\ 1 & e^{-x} & 3 \end{vmatrix} = 17.$$

$$20. \begin{vmatrix} \sqrt{1-x} & 1 & -2 \\ \sqrt{x+1} & 1 & 0 \\ -1 & 0 & 1 \end{vmatrix} = -2.$$

$$21. \begin{vmatrix} 1 & x & x^2 \\ 2 & 1 & x \\ 1-x & 1 & 2 \end{vmatrix} = -x.$$

$$22. \begin{vmatrix} 2 & \sin x & -1 \\ 0 & 2 & \sin x \\ \sin x & 0 & 2 \end{vmatrix} = 2 \sin x.$$

$$23. \begin{vmatrix} 1 & x & x^2 \\ 2 & -1 & x \\ 1-x & 4 & 2 \end{vmatrix} = -2.$$

$$24. \begin{vmatrix} 2 & \cos x & \sin x \\ 0 & 3 & \sin x \\ 1 & 0 & 2 \end{vmatrix} = 12.$$

$$25. \begin{vmatrix} -2 & \cos x & \sin x \\ 1 & 3 & \sin x \\ 1 & 1 & 2 \end{vmatrix} = -12.$$

Vyřešte v $\mathbb{R}$ rovnici, proveďte zkoušku

1.

$$x = 4,$$

2.

$$x = 0,$$

3.

$$x \in \{k\pi, k \in \mathbb{Z}\} \cup \left\{ \frac{\pi}{2} + 2k\pi, k \in \mathbb{Z} \right\},$$

4.

$$x_1 = -2, x_2 = 0, x_3 = 2,$$

5.

$$\text{NŘ},$$

6.

$$x = -1 \vee x = -\frac{1}{2} \vee x = 1,$$

7.

$$x = 0,$$

8.

$$x = 0,$$

9.

$$x_1 = 0, x_2 = -\sqrt{2}, x_3 = \sqrt{2},$$

10.

$$x = 0,$$

11.

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

12.

$$\text{NŘ},$$

13.

$$\text{NŘ},,$$

14.

$$x_1 = -\frac{1}{2}, x_2 = 2,$$

15.

$$x_1 = -\frac{9}{38} x_2 = 0,$$

16.

$$x = 0,$$

17.

$$x = 0,$$

18.

$$x \in \{k\pi, k \in \mathbb{Z}\} \cup \left\{ -\frac{\pi}{2} + 2k\pi, k \in \mathbb{Z} \right\},$$

19.

$$x = \ln 3,$$

20.

$$x = 0,$$

21.

$$x = 1$$

22.

$$\text{NŘ},$$

23.

$$x_1 = 0, x_2 = 1, x_3 = 4$$

24.

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

25.

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