# FISA DE LUCRU-ECUATII IN WORD

a) $\sqrt{2x+5}+\sqrt{3x-5}=4,$

b) $\sqrt[3]{x}+\sqrt[3]{3x-2}=\sqrt[3]{x-2},$

c) $\dfrac{(4-x)\sqrt{4-x}+(x-2)\sqrt{x-2}}{\sqrt{4-x}+\sqrt{x-2}}=2,$

d) $\sqrt{x-2}+\sqrt{x+2}+2\sqrt{(x-2)(x+2)}=6-2x,$

e) $\sqrt{x-1}+\sqrt{3-x}=x^2-4x+6,$

f) $\sqrt[4]{x+7}-\sqrt[4]{x-9}=2,$

g) $\dfrac{x^2}{\sqrt{2x+15}}+\sqrt{2x+15}=2x,$

h) $3\sqrt{x^2-9}+4\sqrt{x^2-16}+5\sqrt{x^2-25}=\dfrac{120}{x},$

i) $\sqrt{x(x+1)}=\sqrt{x+3}-\sqrt{1+\dfrac{1}{x^2}}.$

**Fig.1**

**a)**

$$A=\begin{pmatrix}1 & -2 & 3\\ 2 & 1 & 2\\ 4 & 2 & 4\\ 3 & -6 & 9\end{pmatrix}$$

**b)**

$$\Delta(n)=\begin{vmatrix} n & n-1 & n-2 & \dots & 3 & 2 & \sum_{k=1}^{n} kx^{k-1}\\ -1 & x & 0 & \dots & 0 & 0 & -x^{n}+x^{n-1}x\\ 0 & -1 & x & \dots & 0 & 0 & -x^{n-1}+x^{n-2}x\\ \dots & \dots & \dots & \dots & \dots & \dots & \dots\\ 0 & 0 & 0 & \dots & -1 & x & -x^{3}+x^{2}x\\ 0 & 0 & 0 & \dots & 0 & 1 & -x^{2}+xx \end{vmatrix}$$

$$=\left(\sum_{k=1}^{n} kx^{k-1}\right)\cdot\begin{vmatrix} -1 & x & 0 & \dots & 0 & 0\\ 0 & -1 & x & \dots & 0 & 0\\ \dots & \dots & \dots & \dots & \dots & \dots\\ 0 & 0 & 0 & \dots & -1 & x\\ 0 & 0 & 0 & \dots & 0 & 1 \end{vmatrix}$$

$$=(-1)^{n-1}\sum_{k=1}^{n} kx^{k-1}$$

**Fig.2**

# FISA DE LUCRU-ECUATII IN WORD

1. $\left[\left(\sqrt[3]{5}\right)^{\sqrt{5}}\right]^{-3\sqrt{5}}$

2. $\left(\frac{\sqrt{a}}{3}+\frac{3}{\sqrt[3]{a}}\right)^{13}$

3. $\left(\sqrt[5]{x}+\frac{1}{\sqrt{x}}\right)^{21}$

4. $\frac{\sqrt{a\sqrt[3]{a\sqrt{a}}}}{\sqrt{a\sqrt[3]{a\sqrt[4]{a}}}}$

5. $\frac{\sqrt{\frac{abc+4}{a}-4\sqrt{\frac{bc}{a}}}}{\sqrt{abc}-2}=\frac{1}{\sqrt{a}}$

6. $\frac{\sqrt[4]{x}}{\sqrt[12]{y^{19}}}*\left(\frac{x^{\frac{1}{2}}\sqrt[3]{y}}{\sqrt[4]{xy^{-1}}}\right)^{\frac{1}{3}}*\left(\frac{x^{-\frac{3}{8}}}{y^{-\frac{2}{3}}}\right)^{\frac{4}{3}}$

**Fig.3**

$$(1+x)^n=1+\frac{nx}{1!}+\frac{n(n-1)x^2}{2!}+\cdots$$

**Fig.4**

7. $9^x = \frac{1}{729}$

8. $3^x = \sqrt[3]{9}$

9. $4^{\sqrt{x+1}} = 64 * 2^{\sqrt{x+1}}$

10. $\sqrt[2]{8^{x-1}} = \sqrt[3]{4^{2-x}}$

11. $\left(\frac{3}{5}\right)^{x+1} + \left(\frac{3}{5}\right)^{1-x} = 1{,}2$

12. $(\sqrt{5})^{\frac{1}{2}}$

**Fig.5**

$$\frac{2x+4}{x-1}+(2x+3)$$

$$\begin{cases} 2x+7<0 \\ 4x^2+x\geq 7 \end{cases}$$

$$\sqrt[n]{4x+\frac{x_2+x_1}{2x+1}}$$

$$2\pm\sin x+\frac{\tan x}{\cos y}\geq\propto$$

$$\Omega+\pi=\beta$$

**Fig.6**