Realizați un document word cu numele FORMULE în care să introduceți următoarele ecuații matematice.

***Margini**: Sus 2cm, Jos 1 cm, Dreapta 2 cm, Stânga 1.5 cm*
***Orientare**: Portret,*
***Dimensiune**: A4*
***Inscriptionare**: Inserarea ecuațiilor*
***Bordură de pagină**: 3D, culoare verde, lățime 3 pct*

1)

$$\cos\frac{7\pi}{12} = \cos\frac{3\pi+4\pi}{12} = \cos\left(\frac{3\pi}{12}+\frac{4\pi}{12}\right) = \cos\left(\frac{\pi}{4}+\frac{\pi}{3}\right) =$$
$$= \cos\frac{\pi}{4}\cos\frac{\pi}{3} - \sin\frac{\pi}{4}\sin\frac{\pi}{3} = \frac{\sqrt{2}}{2}\cdot\frac{1}{2} - \frac{\sqrt{2}}{2}\cdot\frac{\sqrt{3}}{2} = \frac{\sqrt{2}}{4} - \frac{\sqrt{6}}{4} = \frac{\sqrt{2}-\sqrt{6}}{4}$$
$$\sin\frac{7\pi}{12} = \sin\left(\frac{3\pi+4\pi}{12}\right) = \sin\left(\frac{3\pi}{12}+\frac{4\pi}{12}\right) = \sin\frac{\pi}{4}\cos\frac{\pi}{3} + \sin\frac{\pi}{3}\cos\frac{\pi}{4} =$$
$$= \frac{\sqrt{2}}{2}\cdot\frac{1}{2} + \frac{\sqrt{3}}{2}\cdot\frac{\sqrt{2}}{2} = \frac{\sqrt{2}}{4} + \frac{\sqrt{6}}{4} = \frac{\sqrt{2}+\sqrt{6}}{4}$$

2)

$$\boldsymbol{(a+b)^2 = a^2 + 2ab + b^2}$$

$$\left(x+\sqrt{5}\right)^2 = x^2 + 2x\sqrt{5} + \sqrt{5}^2 =$$

$$= x^2 + 2\sqrt{5}x + 5;$$

$$\left(xy+3\sqrt{5}\right)^2 = (xy)^2 + 2\cdot xy\cdot 3\sqrt{5} + (3\sqrt{5})^2$$
$$= x^2y^2 + 6xy\sqrt{5} + 3^2\sqrt{5}^2 =$$
$$= x^2y^2 + 6xy\sqrt{5} + 45;$$

$$\boldsymbol{(a-b)^2 = a^2 - 2ab + b^2}$$

$$\left(\sqrt{2}-y\right)^2 = \sqrt{2}^2 - 2\sqrt{2}y + y^2 =$$

$$= 4 - 2\sqrt{2}y + y^2;$$

$$\left(xy-\frac{3}{2}\right)^2 = x^2y^2 - 2xy\frac{3}{2} + \left(\frac{3}{2}\right)^2 =$$

$$= x^2y^2 - 3xy + \frac{9}{4};$$

3)

$$6x^4+5x^3-38x^2+5x+6=0 \Leftrightarrow 6\left(x^2+\frac{1}{x^2}\right)+5\left(x+\frac{1}{x}\right)-38=0 \Leftrightarrow$$

$$\Leftrightarrow 6\left[\left(x+\frac{1}{x}\right)^2-2\right]+5\left(x+\frac{1}{x}\right)-38=0 \Leftrightarrow \begin{cases} 6t^2+5t-50=0, \\ t=x+\frac{1}{x}, \end{cases} \Leftrightarrow$$

$$\Leftrightarrow \begin{cases} \left[\begin{array}{l} t_1=-\frac{10}{3}, \\ t_2=\frac{5}{2}, \end{array}\right. \\ t=x+\frac{1}{x}, \end{cases} \Leftrightarrow \left[\begin{array}{l} x+\frac{1}{x}=-\frac{10}{3}, \\ x+\frac{1}{x}=\frac{5}{2}, \end{array}\right. \Leftrightarrow \left[\begin{array}{l} 3x^2+10x+3=0, \\ 2x^2-5x+2=0, \end{array}\right. \Leftrightarrow \left[\begin{array}{l} x_1=-3, \\ x_2=-\frac{1}{3}, \\ x_3=\frac{1}{2}, \\ x_4=2. \end{array}\right.$$

4)

$$\begin{cases} a_{11}x_1+ & a_{12}x_2+ & a_{13}x_3=b_1 \\ a_{21}x_1+ & a_{22}x_2+ & a_{23}x_3=b_2 \\ a_{31}x_1+ & a_{32}x_2+ & a_{33}x_3=b_3 \end{cases} \text{ care are } A=\begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix}, \text{ cu}$$

$\det A \neq 0$, este un sistem Cramer si se rezolva parcurgand aceleasi etape:

- d = det A.
- $d_{x1}=\begin{vmatrix} b_1 & a_{12} & a_{13} \\ b_2 & a_{22} & a_{23} \\ b_3 & a_{32} & a_{33} \end{vmatrix}$; $d_{x2}=\begin{vmatrix} a_{11} & b_1 & a_{13} \\ a_{21} & b_2 & a_{23} \\ a_{31} & b_3 & a_{33} \end{vmatrix}$; $d_{x3}=\begin{vmatrix} a_{11} & a_{12} & b_1 \\ a_{21} & a_{22} & b_2 \\ a_{31} & a_{32} & b_3 \end{vmatrix}$
- $x_1=\frac{d_{x1}}{d}$; $x_2=\frac{d_{x2}}{d}$; $x_3=\frac{d_{x3}}{d}$.