D. SISTEME DE ECUATII SI INECUATII

a) SISTEME DE ECUATII

1) $\begin{cases} 2x - 3y = 8 \\ 4x + 5y = 6 \end{cases}$ **2)** $\begin{cases} 6(x + 2y) = 4(3y - 2x) - 7 \\ -4(x + y) = 3 - 2(x + 5y) \end{cases}$ **3)** $\begin{cases} 6(3 - x) + 8y = 15 \\ 5x - 3(2 - 3y) = -8 \end{cases}$

4) $\begin{cases} 3(x + y) + 5(x - y) = 14 \\ 5(x + y) - 7(x - y) = 8 \end{cases}$ **5)** $\begin{cases} -2(x + 2y - 1) + 3(-x + 3y + 2) = 8 \\ 4(x + 2y - 1) - 5(-x + 3y + 2) = 2 \end{cases}$

6) $\begin{cases} 2(x + 1) = 3(y - 1) + 14 \\ 4x - 3(2x + y - 1) = 2(-x + y) + 8 \end{cases}$ **7)** $\begin{cases} x + 2[y - 3(x-1)] = 15 \\ y - 3[x - 2(y + 1)] = 23 \end{cases}$

8) $\begin{cases} x + 2[y - 3(x-1)] = 25 \\ y - 3[x - 2(y + 1)] = 0 \end{cases}$ **9)** $\begin{cases} (y+5)(x+3)=(x+1)(y+8) \\ (2x-3)(5y+7)=2(5x-6)(y+1) \end{cases}$

10) $\begin{cases} \frac{x}{6} + y = 1 - \frac{x+y}{4} \\ \frac{x}{8} - y = 2 - \frac{x-y}{6} \end{cases}$ **11)** $\begin{cases} \frac{x-3}{4} - \frac{y-2}{2} = \frac{1}{8} \\ \frac{4-x}{2} + \frac{3-y}{6} = \frac{1}{12} \end{cases}$

12) $\begin{cases} \frac{8-x}{3} + \frac{5-y}{4} = 1 \\ \frac{x-3}{2} + \frac{y-5}{4} = 3 \end{cases}$ **13)** $\begin{cases} 2x - \frac{3y-2}{5} = 3 \\ 3y + \frac{2x+3}{3} = -\frac{4}{3} \end{cases}$

14) $\begin{cases} \frac{1}{x} + \frac{1}{y} = 0{,}7 \\ \frac{3}{x} - \frac{5}{y} = 0{,}5 \end{cases}$ **15)** $\begin{cases} 3x - \frac{1}{2y} = 5 \\ -2x + \frac{3}{y} = 6 \end{cases}$ **16)** $\begin{cases} \frac{1}{x} + 10y = 0 \\ \frac{5}{x} + 49y = 1 \end{cases}$

17) $\begin{cases} \frac{1}{x} - \frac{1}{y} = 2 \\ \frac{5}{x} - \frac{2}{y} = 31 \end{cases}$ **18)** $\begin{cases} \frac{5x+3y}{xy} = \frac{1}{2} \\ \frac{3x-2y}{xy} = \frac{7}{2} \end{cases}$ **19)** $\begin{cases} \frac{x+y}{x-y} = \frac{1}{2} \\ x+y = 3 \end{cases}$

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20) $\begin{cases}(\sqrt{2}+\sqrt{3})\cdot x-(\sqrt{2}-\sqrt{3})\cdot y=4\sqrt{6}\\(\sqrt{2}-\sqrt{3})\cdot x+(\sqrt{2}+\sqrt{3})\cdot y=-2\end{cases}$

21) $\begin{cases}(y+5)(x+3)=(x+1)(y+8)\\(2x-3)(5y+7)=2(5x-6)(y+1)\end{cases}$

23) $\begin{cases}\sqrt{2}x+\sqrt{3}y=5\\2\sqrt{2}x-5\sqrt{3}y=-11\end{cases}$

24) $\begin{cases}3x-2y=\sqrt{2}+5\sqrt{3}\\\sqrt{2}x-\sqrt{3}y=5\end{cases}$

25) $\begin{cases}3\sqrt{x}+2\sqrt{y}=1\\4\sqrt{x}+3\sqrt{y}=1\end{cases}$

26) $\begin{cases}3|x|+2|y|=19\\2|x|-5|y|=-19\end{cases}$

27) $\begin{cases}(4x+1)^2-5(y+1)=16x^2+3(x-1)\\3y-(2x+1)(2x-1)=-2(2x^2+x+3\end{cases}$

28) $\begin{cases}|x-y|=4\\2x-y=5\end{cases}$

29) $\begin{cases}y-\dfrac{1}{2x-y}=3x-1\\9x-\dfrac{5}{y-2x}=11+3y\end{cases}$

30) $\begin{cases}\dfrac{x-3}{y}=\dfrac{x-1}{y-1}\\(x-2)^2-(y+1)^2=(x+3)^2-y^2-72\end{cases}$

31) $\begin{cases}\dfrac{2x-1}{2}+\dfrac{y+1}{3}=-\dfrac{1}{6}\\3(x-1)+y^2=(y-1)(y+1)-y+2\end{cases}$

32) $\begin{cases}x+y=6\\y+z=10\\x+z=8\end{cases}$

33) $\begin{cases}\dfrac{1}{x}+\dfrac{1}{y}=8\\\dfrac{1}{x}+\dfrac{1}{z}=13\\\dfrac{1}{y}+\dfrac{1}{z}=11\end{cases}$

34) $\begin{cases}\dfrac{xy}{x+y}=\dfrac{1}{5}\\\dfrac{xz}{x+z}=\dfrac{1}{6}\\\dfrac{yz}{y+z}=\dfrac{1}{7}\end{cases}$

35) Determinati perechile de numere intregi (x , y) corespunzatoare fiecarei ecuatii:

a) $x^2+y^2-6x+4y+13=0$ **b)** $x^2+y^2+2x-2y+2=0$
c) $(1-x+y)\cdot\sqrt{2}=y\cdot\sqrt{(1-\sqrt{2})^2}+4$ **d)** $|x-2y+1|+|2x+y-3|=0$
e) $x^2-9y^2=13$ **f)** $xy-2x-y=3$ **g)** $x^2-2x+y^2+8y+17=0$
h) $x^2y+x^2+y=36$ **i)** $xy+y-y-1=5$ **j)** $2x-5y+xy=14$
k) $4x^2+y^2-2(2x-3y)=-10$ **l)** $x(x-2)+y(y-4)+5=0$

36) Daca $x^2+y^2-2(x+y)+5=0$ atunci: $x^2+y^2-5xy=$ .....

37) Expresia $9a^2-12a+b^2-4b+5$ ia valoarea minima pentru a=..... ; b=.....

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b) SISTEME DE INECUATII

1) $\begin{cases} 9 + \dfrac{4x-11}{7} < \dfrac{x-3}{5} \\ 1 - \dfrac{1-x}{-1} \geq \dfrac{-x-1}{-1} \end{cases}$

2) $\begin{cases} 8(3x-2) - 7x - 5(12-3x) > 13x \\ 20 < \dfrac{2}{3}\cdot(7x-10) - \dfrac{1}{2}\cdot(50-x) \end{cases}$

3) $\begin{cases} 2x - 5 < 3x \\ 2\sqrt{3}\cdot x - 5\sqrt{3} < 3\sqrt{3}\cdot x \end{cases}$

4) $\left| \dfrac{x+1}{2x-3} \right| \leq 1$

5) $\begin{cases} \dfrac{3x-1}{-2} \leq 0 \\ \dfrac{-6}{-x+8} \geq 0 \end{cases}$

Precizati solutiile naturale ale fiecarui sistem:

1) $\begin{cases} 3(x+1) > \dfrac{x}{2} + 8 \\ \dfrac{5x-2}{2} \leq x + 8 \end{cases}$

2) $\begin{cases} x + 3 \geq \dfrac{3x+19}{5} \\ 2 - x > \dfrac{x-5}{2} \end{cases}$

3) $\begin{cases} \dfrac{x-1}{2} \geq \dfrac{3x-2}{3} \\ \dfrac{2x+1}{2} \geq \dfrac{x+2}{4} \end{cases}$

4) $\begin{cases} \dfrac{2x-1}{3} \geq \dfrac{4x-3}{7} - 2 \\ \dfrac{2x+5}{3} > \dfrac{3-x}{4} + x \end{cases}$

Precizati solutia fiecarui sistem in Z - N :

1) $\begin{cases} \dfrac{3x-1}{2} > \dfrac{7x-3}{4} - 2 \\ \dfrac{2x+4}{5} \leq \dfrac{4-x}{3} + x \end{cases}$

2) $\begin{cases} \dfrac{x-4}{2} + 2 > \dfrac{x-3}{3} \\ \dfrac{x+1}{3} - \dfrac{x+4}{2} \geq -\dfrac{7}{3} \end{cases}$

3) $\begin{cases} \dfrac{2x+7}{-4} < 1 \\ \dfrac{x+3}{5} \leq -\dfrac{1}{3} \end{cases}$

4) $\begin{cases} \dfrac{x+1}{3} - 1 < -3 \\ \dfrac{2x+5}{4} \geq -10 \end{cases}$

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