ESERCIZI IN PIÙ

ESERCIZI DI FINE CAPITOLO

Risolvi i seguenti sistemi lineari, utilizzando per ciascuno il metodo che ritieni più opportuno.

1 $\begin{cases} 2x - y = 3(y+2) \\ \frac{1}{3}x - \frac{1}{2}y = 2 \end{cases}$ [(15; 6)]

2 $\begin{cases} 3x(2y-2) + 3x - 2y - 6 + 2y = 5(3x-1) - 2y + 1 + (3x-1)(2y-1) \\ 1 - 3x + (3x+4y-3)^2 + 1 + 3(x-y) - y = 3x(3x-2) + 4(2y-1)(2y+3x-2) \end{cases}$ $\left[\left(0; \frac{3}{4}\right)\right]$

3 $\begin{cases} \frac{2}{3}x + [(x+2y)(x-1) - x^2 + x] = \frac{1}{2}\left(1 + \frac{y}{2}\right) + y(2x-2) \\ 2y - \frac{13}{3}x = -3 \end{cases}$ $\left[\left(1; \frac{2}{3}\right)\right]$

4 $\begin{cases} \frac{3}{2}x - y + (x-y)^2 - 4xy = \frac{1}{2} + x^2 + y^2 - 6xy \\ \frac{3}{2}(x-1) - \left(y - \frac{1}{3}x\right) = \frac{1}{3}x - \frac{1}{2} \end{cases}$ [impossibile]

5 $\begin{cases} \frac{1}{2}(x+y)^2 - \frac{x^2}{2} + \frac{x+y}{2} - \frac{x}{3} - xy = \frac{y^2}{2} - \frac{2}{3}y \\ \frac{x-y}{3} - 1 = -\frac{x+3y}{2} \end{cases}$ $\left[\left(\frac{3}{2}; -\frac{3}{14}\right)\right]$

6 $\begin{cases} (x+2y)^2 - x(x-1) - y(1+4y) = 3 + 4xy \\ \frac{1}{2} + \frac{x}{5} = \frac{3}{4}y \end{cases}$ [(5; 2)]

7 $\begin{cases} (2x-1)^2 - (x-2)(4x+3) = (y-1)(y+2) - y^2 \\ \frac{x-2y}{2} - \frac{1}{4}(2-x) = \frac{1}{4}(5-y) \end{cases}$ [impossibile]

8 $\begin{cases} \frac{(x+y)[1-(x-y)] + x^2}{6} + \frac{2}{3} - \frac{y^2}{6} = 2 - \frac{3}{2} + \frac{x+y}{4} \\ \frac{y+4}{3} = \frac{x-6}{2} \end{cases}$ [(6; − 4)]

9 $\begin{cases} \frac{1}{2}(x-2y)(2x-y) - \frac{1}{3}x(3x-1) = \frac{1}{3}y\left(1 - \frac{15}{2}x + 3y\right) + \frac{5}{6} \\ \frac{1}{2}(3x-1) - \frac{1}{3}(y-2x) = \frac{3}{2}x + \frac{1}{6}(2y+7) \end{cases}$ [indeterminato]

Risolvi i seguenti sistemi di equazioni fratte (nelle soluzioni sono omesse le condizioni di esistenza).

10 $\begin{cases} \dfrac{x-\frac{1}{2}}{y}+3=\dfrac{4x-2}{2}-2x \\ 3x-2y=\dfrac{3}{2} \end{cases}$ [impossibile]

11 $\begin{cases} \dfrac{\frac{1}{4}x+\frac{1}{2}}{y}+\dfrac{9}{10}=\dfrac{\frac{2}{5}x-\frac{1}{4}}{y} \\ 2(x+y)=3 \end{cases}$ $\left[\left(2;-\frac{1}{2}\right)\right]$

12 $\begin{cases} \dfrac{3y-2}{2x-1}=2 \\ \dfrac{2x-5}{y-2}=\dfrac{2x+7}{y+2} \end{cases}$ [impossibile]

13 $\begin{cases} \dfrac{3x-2}{2y-3}-\dfrac{3x-5}{2y+3}=\dfrac{54}{9-4y^2} \\ \dfrac{2y-1}{x}-\dfrac{6y-7}{3x-1}=\dfrac{8}{x-3x^2} \end{cases}$ $\left[\left(-2;\frac{1}{2}\right)\right]$

14 $\begin{cases} \dfrac{2x-1}{3y+2}=\dfrac{2x-5}{3y-2} \\ \dfrac{3y-4}{4x-1}=\dfrac{3y-10}{4x} \end{cases}$ [impossibile]

15 $\begin{cases} \dfrac{2y-1}{x}=\dfrac{1+2x}{3x} \\ \dfrac{4}{x+y}=\dfrac{2}{3} \end{cases}$ $[(4;2)]$