

5/10/2021

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$$\begin{cases} \frac{1}{x-y} = \frac{1}{x+y} - \frac{x+y-1}{x^2-y^2} \\ (x-1)^2 + y = (x-2)^2 \end{cases}$$

$$\left[ \left( \frac{8}{5}, -\frac{1}{5} \right) \right]$$

$$\begin{cases} \frac{1}{x-y} = \frac{1}{x+y} - \frac{x+y-1}{(x-y)(x+y)} \\ \cancel{x^2} + 1 - 2x + y = \cancel{x^2} + 4 - 4x \end{cases}$$

$$\text{C.E. } x \neq y \wedge x \neq -y$$

$$x \neq \pm y$$

$$\begin{cases} \frac{x+y}{(x-y)(x+y)} = \frac{\cancel{x-y} - \cancel{x-y} + 1}{(x-y)(x-y)} \quad (-2) \\ 2x + y = 3 \end{cases} \begin{cases} x + 3y = 1 \\ 2x + y = 3 \end{cases} \begin{cases} -2x - 6y = -2 \\ 2x + y = 3 \\ \hline -5y = 1 \end{cases}$$

$$\begin{cases} x = 1 - 3y = 1 + \frac{3}{5} = \frac{8}{5} \\ y = -\frac{1}{5} \end{cases} \text{accettabile dopo controlli C.E.}$$

$$\boxed{\left( \frac{8}{5}, -\frac{1}{5} \right)}$$

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

$$\left[ (-2, -2) \right]$$

$$\begin{cases} \frac{x}{(y+4)(y-1)} = \frac{1}{2(y-1)} + \frac{1}{y+4} \\ \cancel{y^2} = \cancel{y^2} + 1 + 2y + x + 5 \end{cases}$$

$$\text{C.E. } y \neq 1 \\ y \neq -4$$

$$\begin{cases} \frac{2x}{2(y+4)(y-1)} = \frac{y+4+2(y-1)}{2(y+4)(y-1)} \\ x + 2y = -6 \end{cases} \begin{cases} 2x = y + 4 + 2y - 2 \\ x = -2y - 6 \end{cases}$$

$$\begin{cases} 2(-2y-6) = 3y+2 \\ x = -2y-6 \end{cases} \begin{cases} -4y-12 = 3y+2 \\ // \end{cases} \begin{cases} -7y = 14 \\ // \end{cases} \begin{cases} y = -2 \\ x = -2 \end{cases} \text{dopo controlli C.E.} \quad \boxed{(-2, -2)}$$

Ex. 113

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$$\begin{cases} \frac{x}{4a^2 - 4a + 1} + \frac{y}{2a - 1} = 0 \\ x + (a - 3)y - 1 = 0 \end{cases}$$

$a = \frac{1}{2} \Rightarrow$  perde di significato

$$a \neq \frac{1}{2} \begin{cases} \frac{x}{(2a-1)^2} + \frac{y}{2a-1} = 0 \\ x = 1 - (a-3)y \end{cases}$$

$$\begin{cases} \frac{x + (2a-1)y}{(2a-1)^2} = 0 \\ x = 1 - (a-3)y \end{cases} \begin{cases} 1 - (a-3)y + (2a-1)y = 0 \\ x = 1 - (a-3)y \end{cases}$$

$$\begin{cases} 1 + y[-(a-3) + 2a-1] = 0 \\ x = 1 - (a-3)y \end{cases} \begin{cases} 1 + (a+2)y = 0 \\ x = 1 - (a-3)y \end{cases}$$

$$\begin{cases} (a+2)y = -1 \\ x = 1 - (a-3)y \end{cases}$$

$$a+2 \neq 0 \Rightarrow a \neq -2 \Rightarrow \begin{cases} y = -\frac{1}{a+2} \\ x = 1 + \frac{a-3}{a+2} = \frac{a+2+a-3}{a+2} = \frac{2a-1}{a+2} \end{cases}$$

$$a = -2 \Rightarrow \begin{cases} 0 = -1 \\ x = \dots \end{cases} \text{ SISTEMA IMPOSSIBILE}$$

$a \neq -2$  e  $a \neq \frac{1}{2}$  SIST. DET.  $\left(\frac{2a-1}{a+2}, -\frac{1}{a+2}\right)$   $a = -2$  IMPOSS.  $a = \frac{1}{2}$  PERDE DI SIGNIFICATO

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$$\begin{cases} (x - 2a)^2 - x^2 = ay \\ (-y + a)(y - a) = (a - y)(a + y) + ax \end{cases}$$

[Se  $a \neq 0$ :  $(\frac{2}{3}a, \frac{4}{3}a)$ ; se  $a = 0$ : indeterminato]

$$\begin{cases} \cancel{x^2} + 4a^2 - 4ax - \cancel{x^2} = ay \\ -\cancel{y^2} + 2ay - a^2 = a^2 - \cancel{y^2} + ax \end{cases} \begin{cases} 4ax + ay = 4a^2 \\ ax - 2ay = -2a^2 \end{cases}$$

$$a \neq 0 \begin{cases} 4x + y = 4a \\ x - 2y = -2a \end{cases} \begin{cases} y = -4x + 4a \\ x - 2(-4x + 4a) = -2a \end{cases} \begin{cases} y = -4x + 4a \\ x + 8x - 8a = -2a \end{cases}$$

$$\begin{cases} y = \dots \\ 9x = 6a \end{cases} \begin{cases} y = -\frac{8}{3}a + 4a = \frac{-8+12}{3}a = \frac{4}{3}a \\ x = \frac{6}{9}a = \frac{2}{3}a \end{cases} \left(\frac{2}{3}a, \frac{4}{3}a\right)$$

$$a = 0 \begin{cases} 0 = 0 \\ 0 = 0 \end{cases} \text{ SIST. INDETERMINATO}$$

$$a \neq 0 \text{ SIST. DET. } \left(\frac{2}{3}a, \frac{4}{3}a\right) \quad a = 0 \text{ SIST. INDETERMINATO}$$