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TRIPOLIO PARTIQUAZ

C.E.
 $a \neq \frac{3}{2}$

$$\frac{2e^2 - e - 3}{8e^3 - 36e^2 + 54e - 27} = \frac{(e+1)(2e-3)}{(2e-3)^3} = \frac{e+1}{(2e-3)^2}$$

CUBO DI BINOMIO

$$2e^2 - e - 3 = 2e^2 - 3e + 2e - 3 = e(2e-3) + (2e-3) = (e+1)(2e-3)$$

$s = -1$ $p = -6$

-3 + 2

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QUADRATO DI BINOMIO

C.E.
 $y \neq 2$

$$\frac{y^2 + 4 - 4y}{y^3 - 8} = \frac{(y-2)^2}{(y-2)(y^2+4+2y)} = \frac{y-2}{y^2+4+2y}$$

DIFF. DI CUBI

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DIFF. DI QUADRATI

$$\left(\frac{a+b}{a-b} - 1\right)^{-2} : \left(\frac{2ab}{a^2-b^2}\right)^{-1} =$$

$$= \left(\frac{a+b - a+b}{a-b}\right)^{-2} : \left(\frac{2ab}{(a-b)(a+b)}\right)^{-1} =$$

TRAVO IL M.C.M.

$$= \left(\frac{2b}{a-b}\right)^{-2} : \frac{(a-b)(a+b)}{2ab} =$$

$$= \frac{(a-b)^2}{4b^2} \cdot \frac{2ab}{(a-b)(a+b)} =$$

$$= \frac{a(a-b)}{2b(a+b)}$$

C.E.
 $a-b \neq 0$ $a \neq b$
 $a \neq 0$ $b \neq 0$
 $a+b \neq 0$ $a \neq -b$

INVERTO LA POTENZA PERCHÉ NEGATIVA
 DIVIDO PERCHÉ LA POTENZA NUMERATORE È DENOMINATORE
 ELEVATO
 SEMPLIFICO

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$$\left(\frac{x^2 - 4x + 4}{3 - x} \right)^2 \cdot \left(\frac{x - 3}{x^2 - 4} \right)^4$$

QUAD. DI BINOMIO

$$= \left[\frac{(x-2)^2}{3-x} \right]^2 \cdot \left[\frac{x-3}{(x-2)(x+2)} \right]^4$$

DIFF. DI QUADRA

$$= \frac{(x-2)^4}{(3-x)^2} \cdot \frac{(x-3)^4}{(x-2)^4(x+2)^4} =$$

$$= \frac{\cancel{(x-2)^4} \cdot \cancel{(x-3)^4}^2}{\cancel{(x-3)^2} \cdot \cancel{(x-2)^4} (x+2)^4} = \frac{(x-2)^3}{(x+2)^4}$$

C.E
 $x \neq 3$
 $x \neq \pm 2$

IMPORTANTE:
 $(x-3)^2 = (3-x)^2$

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$$\left(\frac{2}{e^2 - 4e + 4} + \frac{4}{e^3 - 6e^2 + 12e - 8} \right)^{-3} \cdot \frac{(e^2 - 4e + 4)^2}{e^3} =$$

$$= \left[\frac{2}{(e-2)^2} + \frac{4}{(e-2)^3} \right]^{-3} \cdot \frac{[(e-2)^2]^2}{e^3}$$

QUAD. DI BINOMIO

CUBO DI BINOMIO

C.E
 $e \neq 2$
 $e \neq 0$

$$= \left[\frac{2(e-2) + 4}{(e-2)^3} \right]^{-3} \cdot \frac{e^3}{(e-2)^4}$$

m.c.m.

$$= \left[\frac{2e - 4 + 4}{(e-2)^3} \right]^{-3} \cdot \frac{e^3}{(e-2)^4} = \left[\frac{2e}{(e-2)^3} \right]^{-3} \cdot \frac{e^3}{(e-2)^4} =$$

$$= \left(\frac{(e-2)^3}{2e} \right)^3 \cdot \frac{e^3}{(e-2)^4} = \frac{(e-2)^9}{8e^3} \cdot \frac{e^3}{(e-2)^4} = \frac{(e-2)^5}{8}$$

$$\left(\frac{x^2 - 7x + 6}{x^3 + 25 - x^2 - 25x} \right) \cdot \frac{x^2 - 36}{x^2 - 6x + 5} \cdot \left(\frac{x^2 + 11x + 30}{x - 1} \right)^{-2} \cdot \frac{x}{x + 5} =$$

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(1)
 $x^2 - 7x + 6$
 $S = -7 \quad p = 6$
 $-6 \quad -1$
 $(x-6)(x-1)$
 TRIPONIO
 RAZÃO 6/6R

(2)
 $x^3 + 25 - x^2 - 25x =$
 $x^2(x-1) - 25(x-1) =$
 $(x^2 - 25)(x-1) =$
 $(x-5)(x+5)(x-1)$
 PARABOLA + DIFF. QUADRADA

(3)
 $x^2 - 6x + 5$
 $S = -6$
 $p = 5$
 $-5 \quad -1$
 $(x-5)(x-1)$
 TRIPONIO

(5)
 $x^2 + 11x + 30$
 $S = 11$
 $p = 30$
 $6 \quad 5$
 $(x+6)(x+5)$
 TRIPONIO

(4)
 $x^2 - 36$
 $(x-6)(x+6)$
 DIFF. QUADRA

$$\left[\frac{(x-6)(x-1)}{(x-5)(x+5)(x-1)} \cdot \frac{(x-6)(x+6)}{(x-5)(x-1)} \right] \cdot \left[\frac{(x+6)(x+5)}{(x-1)} \right]^{-2} \cdot \frac{x}{x+5} =$$

$$= \left[\frac{\cancel{(x-6)}\cancel{(x-1)}}{\cancel{(x-5)}(x+5)\cancel{(x-1)}} \cdot \frac{\cancel{(x-5)} \cdot \cancel{(x-1)}}{\cancel{(x-6)}(x+6)} \right] \cdot \frac{(x+6)^2 (x+5)^{-2}}{(x-1)^2} \cdot \frac{x}{\cancel{x+5}}$$

$$= \frac{\cancel{x-1}}{\cancel{(x+6)}\cancel{(x+5)}} \cdot \frac{(x+6)^2 (x+5)}{(x-1)^2} \cdot x =$$

$$= \frac{x(x+6)}{x-1} = \frac{x^2 + 6x}{x-1}$$

C. G
 $x \neq \pm 5$
 $x \neq 1$
 $x \neq \pm 6$

$$\frac{9x-2}{3x-3} + \frac{x+2}{1-x} = 0$$

$$\frac{9x-2}{3(x-1)} + \frac{x+2}{1-x} = 0$$

$$\frac{9x-2}{3(x-1)} - \frac{x+2}{x-1} = 0$$

$$\frac{9x-2-3(x+2)}{3(x-1)} = 0$$

$$\frac{9x-2-3x-6}{3(x-1)} = 0$$

C.E. $x \neq 1$
 $6x - 8 = 0$
 $x = \frac{8}{6} = \frac{4}{3}$
 ACCETTABILE

$$\frac{2x+1}{3x} - \frac{1}{3x-x^2} = \frac{6x-5}{9x-27}$$

$$\frac{2x+1}{3x} - \frac{1}{x(3-x)} - \frac{6x-5}{9(x-3)} = 0$$

$$\frac{2x+1}{3x} + \frac{1}{x(x-3)} - \frac{6x-5}{9(x-3)} = 0$$

$$\frac{3(2x+1)(x-3) + 9 - (6x-5)x}{9x(x-3)} = 0$$

C.E. $x \neq 0$
 $x \neq 3$

$$3(2x^2 - 6x + x - 3) + 9 - 6x^2 + 5x = 0$$

$$6x^2 - 18x + 3x - 9 + 9 - 6x^2 + 5x = 0$$

$$-10x = 0$$

$x = 0$
 NON ACC
 IMPOSSIBILE

$$\frac{1}{x^2+2x} - \frac{2}{x^2+x-2} = -\frac{1}{x^2-2x+1}$$

$$\frac{1}{x(x+2)} - \frac{2}{(x+2)(x-1)} + \frac{1}{(x-1)^2} = 0$$

$$\frac{(x-1)^2 - 2x(x+2) + x(x+2)}{x(x+2)(x-1)^2} = 0$$

$$x^2 + 1 - 2x - 2x^2 + 1 + x^2 + 2x = 0$$

$2 = 0$
 IMPOSSIBILE

C.E.
 $x \neq 0$
 $x \neq -2$
 $x \neq 1$

$$\frac{x+16}{x^2-3x-10} + 2 = \frac{x-2}{x-5} + \frac{x}{x+2}$$

$$\frac{x+16}{(x-5)(x+2)} + 2 - \frac{x-2}{x-5} - \frac{x}{x+2} = 0$$

$$\frac{x+16+2(x+2)(x-5) - (x-2)(x+2) - x(x-5)}{(x-5)(x+2)} = 0$$

$$x+16+2(x^2-3x-10) - (x^2+4) - x^2+5x = 0$$

$$0 = 0 \quad [\text{IMPOSSIBILE} \quad x \neq -2 \quad x \neq 5]$$

C.E. $x \neq -2$
 $x \neq 5$

$$\frac{3(1-2x)}{3x-1} - \frac{7(1+2x)}{3x^2-7x+2} = 2 + \frac{1-4x}{x-2}$$

$$\frac{3-6x}{3x-1} - \frac{7+14x}{(3x-1)(x-2)} - 2 + \frac{1-4x}{x-2} = 0$$

$$\frac{(3-6x)(x-2) - (7+14x) - 2(3x-1)(x-2) - (1-4x)(3x-1)}{(3x-1)(x-2)} = 0$$

C.E. $x \neq \frac{1}{3}$
 $x \neq 2$

$$\begin{aligned} 3x^2 - 7x + 2 \\ s = -7 \\ p = 2 \\ -6 \quad -1 \\ 3x^2 - 6x - x + 2 \\ 3x(x-2) - (x-2) \\ (3x-1)(x-2) \end{aligned}$$

$$3x - 6 - 6x^2 + 12x - 7 - 14x - 2(3x^2 - 7x + 2) - (3x - 1 - 12x^2 + 4x) = 0$$

$$3x - 6 - 6x^2 + 12x - 7 - 14x - 6x^2 + 14x - 4 - 3x + 1 + 12x^2 - 4x = 0$$

$8x - 16 = 0$
 $x = 2$ NOT A CC IMPOSSIBILE

~~PROVA~~

$$\frac{1}{2x-1} - \frac{3}{3x+6} = \frac{-2x^2 - 5x + 9}{4x^3 + 8x^2 - x - 2}$$

$$\frac{1}{2x-1} - \frac{3}{3(x+2)} = \frac{-2x^2 - 5x + 9}{(2x-1)(2x+1)(x+2)}$$

$$\frac{3(x+2)(2x+1) - 3(2x-1)(2x+1) - 3(-2x^2 - 5x + 9)}{3(x+2)(2x-1)(2x+1)} = 0$$

$$3(2x^2 + x + 4x + 2) - 3(4x^2 - 1) + 6x^2 + 15x - 27 = 0$$

$$6x^2 + 3x + 12x + 6 - 12x^2 + 3 + 6x^2 + 15x - 27 = 0$$

$$30x - 18 = 0$$

$$x = \frac{18}{30} = \frac{3}{5}$$

ACCETTABILE

$$\begin{aligned} 4x^3 + 8x^2 - x - 2 &= \\ 4x^2(x+2) - (x+2) &= \\ (4x^2 - 1)(x+2) &= \\ (2x-1)(2x+1)(x+2) &= \end{aligned}$$

PARTE DI DIFF. QUADRA

C.E. $x \neq \pm \frac{1}{2}$
 $x \neq -2$

Pat 544 n° 45 - 1° METODO

$$\frac{2x^3 + 4x^2 - 6}{3x - 3x^2 + x^3 - 1} - \frac{7x-1}{x^2+1-2x} = \frac{3}{x-1} + 2$$

CUBO SEMPLICE

QUADRATO TRIPLO

C.C.
x ≠ 1

$$\frac{2x^3 + 4x^2 - 6}{(x-1)^3} - \frac{7x-1}{(x-1)^2} - \frac{3}{x-1} - 2 = 0$$

$$\frac{2x^3 + 4x^2 - 6 - (7x-1)(x-1) - 3(x-1)^2 - 2(x-1)^3}{(x-1)^3} = 0$$

$$2x^3 + 4x^2 - 6 - (7x^2 - 7x - x + 1) - 3(x^2 + 1 - 2x) - 2(x^3 - 3x^2 + 3x - 1) = 0$$

~~$$2x^3 + 4x^2 - 6 - 7x^2 + 7x + x - 1 - 3x^2 - 3 + 6x - 2x^3 + 6x^2 - 6x + 2 = 0$$~~

$$8x - 8 = 0$$

x = 1 non acc. IMPOSSIBILE

2° METODO | SCOMPONENDO IL NUMERATORE E SEMPLIFICANDO

$$\frac{2(x-1)(x^2+3x+3)}{(x-1)^3} - \frac{7x-1}{(x-1)^2} - \frac{3}{x-1} - 2 = 0$$

$$\frac{2x^2 + 6x + 6}{(x-1)^2} - \frac{7x-1}{(x-1)^2} - \frac{3}{x-1} - 2 = 0 \quad \text{C.C. } x \neq 1$$

$$\frac{2x^2 + 6x + 6 - (7x-1) - 3(x-1) - 2(x-1)^2}{(x-1)^2} = 0$$

$$2x^2 + 6x + 6 - 7x + 1 - 3x + 3 - 2(x^2 + 1 - 2x) = 0$$

~~$$2x^2 + 6x + 6 - 7x + 1 - 3x + 3 - 2x^2 - 2 + 4x = 0$$~~

$$-8 = 0$$

IMPOSSIBILE

① ~~$2x^3 + 4x^2 + 6$~~

2	4	0	-6
1	2	6	6
2	6	6	0

$$(x-1)(2x^2 + 6x + 6) = (x-1)2(x^2 + 3x + 3)$$

IRRIDUCIBILE

② SEMPLIFICANDO NUMERATORE E DENOMINATORE 1° PER OTTENERE **NA** PER LA SOLUZIONE **CG**

C.C.

CAMBIA LA SOLUZIONE DELL'EQUAZIONE AL NUMERATORE NA IL RISULTATO E' SEMPRE IMPOSSIBILE