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

$x^2-xy = x(x-y)$

$$\frac{(x-y)(x+y)}{xy} : \frac{(x-y)^2}{xy} - \frac{x^2-3x^2-2xy+y^2-2x^2}{x(x-y)} : \frac{(x-y)^2}{xy}$$

$$\frac{(x-y)(x+y)}{xy}\cdot\frac{xy}{(x-y)^2} - \frac{(x-y)^2}{x(x-y)}\cdot\frac{xy}{(x-y)^2}$$

C.E. $x \neq y$, $x \neq 0$, $y = 0$

$$\frac{x+y}{x-y} - \frac{y}{x-y} = \frac{x+y-y}{x-y} = \frac{x}{x-y}$$

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C.E. $x+2y+1 \neq 0$, $x-2y+1 \neq 0$

$$\frac{1+x}{x+2y+1} + \frac{2(1-x^2)}{x^2-4y^2+1+2x} - \frac{1-x}{x-2y+1}$$

$x^2-4y^2+1+2x = (x+1)^2-4y^2 = (x+1-2y)(x+1+2y)$

$$\frac{x+x^2+1+x-2y-2xy+2-2x^2-x+x^2-1+x-2y+2xy}{(x+1+2y)(x+1-2y)}$$

$$\frac{2x-4y+2}{(x+1+2y)(x+1-2y)} = \frac{2(x+1-2y)}{(x+1+2y)(x+1-2y)} = \frac{2}{x+1+2y}$$

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$$2a^3-7a^2+7a-2 = 2(a^3-1)-7a(a-1)$$

$$= 2(a-1)(a^2+1+a)-7a(a-1)$$

$$= (a-1)[2a^2+2+2a-7a]$$

Trin. molto speciale
$\alpha\beta = 4$
$\alpha+\beta = -5$

$$= (a-1)(2a^2-5a+2)$$

$$= (a-1)(2a^2-4a-a+2)$$

$$= (a-1)[a(2a-1)-2(2a-1)]$$

$$= (a-1)(2a-1)(a-2)$$

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$a^3-b^3 = (a-b)(a^2+b^2+ab)$

$$x^3y^2-8y^5 = y^2(x^3-8y^3) = y^2(x-2y)(x^2+4y^2+2xy)$$

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$$a^3-39a+70 = a^3-4a-35a+70$$

$$= a(a^2-4)-35(a-2)$$

$$= a(a-2)(a+2)-35(a-2)$$

$$= (a-2)[a^2+2a-35]$$

$$= (a-2)(a+7)(a-5)$$

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$2\cdot 2\cdot 2^n$

$2^n = x$

$$2^{2n+1}-2^{n+3}+8 = 2(2^{2n}-2^{n+2}+4) = 2[(2^n)^2-4\cdot 2^n+4]$$

$$= 2(x^2-4x+4) = 2(x-2)^2 = 2(2^n-2)^2$$