Fracciones Algebraícas

a) $\dfrac{-5xy^4+20x^3y^2}{40x^3y^3+40x^4y^2+10x^2y^4}$ → $\dfrac{2x-y}{4x^2+2xy}$

b) $\dfrac{50-a^2}{5a-a^2}-\dfrac{a}{5-a}-\dfrac{5+a}{a}$ → $\dfrac{5+a}{a}$

c) $\dfrac{9x^4+6x^2+1}{12x^6+4x^4}:\dfrac{9x^4-1}{6x^3-2x}$ → $\dfrac{1}{2x^3}$

d) $\dfrac{1+ab}{3a^2b}-\dfrac{2a+a^2b^2}{2a^3b^2}+\dfrac{1}{6a}$ → $\dfrac{b-3}{3a^2b^2}$

Polinomios

a) $\left(5x^5+12x^3+2x^2-9x+6\right):\left(x^2+3\right)$ → Cociente: $5x^3-3x+2$, Resto: 0

b) $\left(3x^5-x^2+2x\right):(x+1)$
Utilizar la regla de Ruffini
→ Cociente: $3x^4-3x^3+3x^2-4x+6$, Resto: -6

c) $\left(3x^2-2x\right)^2-\left(9x^4+4x^2-12\right)$ → $-12x^3+12$

Ecuaciones y Sistemas

a) $(x^2-2)^2-(x+1)(x-1)=1$ → $X_1=1$, $X_2=-1$, $X_3=2$, $X_4=-2$

b) $2\sqrt{x-1}+x=4$ → $X_1=2$, ~~$X_2=10$~~

c) $\begin{cases}\dfrac{2}{y-1}-\dfrac{3}{x}=-1\\(x-1)(y+1)=0\end{cases}$ → $X_1=1$ $y_1=2$

d) $\begin{cases}2x-y-z=4\\2x-2y-2z=1\\x+y=8\end{cases}$ → $X=7/2$ $y=9/2$ $z=-3/2$

e) $\dfrac{1}{2x-3}-\dfrac{5}{x}=\dfrac{3x}{2x^2-3x}$ → $X=5/4$

f) $\begin{cases}\sqrt{x+y+4}=3\\x^2-2xy=-8\end{cases}$ → $X_1=2$ $y_1=3$; $X_1=4/3$ $y_1=11/3$