

Efectuar las siguientes **sumas y restas** reduciendo previamente a común denominador y dando el resultado simplificado. (NOTA: Con un * se indican aquellos casos en los que, al final del proceso de sumas y restas de F.A., se obtiene una expresión que se puede simplificar):

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|--|--|---|--|
| a) $\frac{3}{2x+4} + \frac{2x}{x^2-4}$ | (Soluc: $\frac{7x-6}{2x^2-8}$) | r) $\frac{a+b}{a-b} - \frac{2ab}{a^2-b^2}$ | (Soluc: $\frac{a^2+b^2}{a^2-b^2}$) |
| b) $\frac{x^2-1}{x^3} - \frac{2x}{x^2+7}$ | (Soluc: $\frac{-x^4+6x^2-7}{x^5+7x^3}$) | * s) $\frac{1}{x-2} - \frac{x^2+4x+8}{(x+2)^2(x-2)} + \frac{1}{x^2-4}$ | (Soluc: $\frac{1}{x^2+4x+4}$) |
| c) $\frac{x}{x^2-1} + \frac{1}{x^2-x-2}$ | (Soluc: $\frac{x^2-x-1}{x^3-2x^2-x+2}$) | * t) $\frac{x-2}{x+2} - \frac{1}{x-2} + \frac{6x-x^2}{x^2-4}$ | (Soluc: $\frac{1}{x-2}$) |
| d) $\frac{x-2}{x+2} + \frac{x+2}{x-2}$ | (Soluc: $\frac{2x^2+8}{x^2-4}$) | * u) $\frac{1}{x-1} - \frac{3x+3}{x^2+x-2} + \frac{1}{x+2}$ | (Soluc: $\frac{1}{1-x}$) |
| e) $\frac{2x}{x^2-4} + \frac{x+1}{4x-8}$ | (Soluc: $\frac{x^2+11x+2}{4x^2-16}$) | v) $\frac{x-1}{x^2-4} - \frac{x-2}{x^2+2x} + \frac{1}{x-2}$ | (Soluc: $\frac{x^2+5x-4}{x^3-4x}$) |
| f) $\frac{x+1}{x-1} - \frac{x-1}{x+1}$ | (Soluc: $\frac{4x}{x^2-1}$) | * w) $\frac{x+1}{x-2} + \frac{x-2}{x+2} - \frac{12}{x^2-4}$ | (Soluc: $\frac{2x+3}{x+2}$) |
| g) $1 - \frac{x}{y}$ | (Soluc: $\frac{y-x}{y}$) | x) $\frac{x-2}{x^2+x-2} - \frac{x+1}{x^2-4} + \frac{x+3}{x^2-3x+2}$ | (Sol: $\frac{x^2+x+11}{x^3-x^2-4x+4}$) |
| h) $x - \frac{x^2-1}{x}$ | (Soluc: $\frac{1}{x}$) | y) $\frac{x^2-x+9}{x^3-9x} + \frac{1}{x^2-9} - \frac{1}{x-3} + \frac{1}{x}$ | (Soluc: $\frac{1}{x+3}$) |
| i) $\frac{3x-2}{x^2-1} + \frac{x+2}{x-1}$ | (Soluc: $\frac{x^2+6x}{x^2-1}$) | z) $\frac{2x}{x-1} + \frac{3x+1}{x-1} - \frac{1-x}{x^2-1}$ | (Soluc: $\frac{5x^2+7x}{x^2-1}$) |
| j) $\frac{7x}{6x+12} - \frac{x+5}{2x^2-8}$ | (Soluc: $\frac{7x^2-17x-15}{6x^2-24}$) | α) $\frac{4}{x+1} + \frac{x}{x^2+1} + \frac{x+1}{x-1}$ | (Soluc: $\frac{x^4+7x^3-2x^2+5x-3}{x^4-1}$) |
| k) $\frac{x+3}{x^2+1} + \frac{2x}{x-3}$ | (Soluc: $\frac{2x^3+x^2+2x-9}{x^3-3x^2+x-3}$) | * β) $\frac{3}{2x-4} + \frac{1}{x+2} - \frac{x+10}{2x^2-8}$ | (Soluc: $\frac{2}{x+2}$) |
| l) $\frac{3x}{x^2-1} - \frac{x+2}{x+1}$ | (Soluc: $\frac{-x^2+2x+2}{x^2-1}$) | * γ) $\frac{x-x^2}{1-x^2} + \frac{1+x}{x^2+2x+1} - \frac{1-2x}{1+x}$ | (Soluc: $\frac{3x}{x+1}$) |
| m) $\frac{1}{x+1} + \frac{2x}{x^2-1} - \frac{1}{x-1}$ | (Soluc: $\frac{2}{x+1}$) | δ) $\frac{1}{x(x-1)} + \frac{2x+1}{x^2-1} + \frac{x}{(x+1)^2}$ | (Soluc: $\frac{3x^3+3x^2+3x+1}{x^4+x^3-x^2-x}$) |
| n) $\frac{3}{x-1} + \frac{x}{x+1} - \frac{x+1}{x^2-1}$ | (Soluc: $\frac{x^2+x+2}{x^2-1}$) | ε) $\frac{1}{x^2-9x+20} - \frac{1}{x^2-11x+30} + \frac{1}{x^2-10x+24}$ | (Soluc: $\frac{x-7}{x^3-15x^2+24x-120}$) |
| o) $\frac{x+2y}{x^2-y^2} + \frac{2x-5y}{x-y}$ | (Soluc: $\frac{2x^2-5y^2-3xy+x+2y}{x^2-y^2}$) | * ζ) $\frac{x^3-5x^2+16x+9}{x(x^2-9)} - \frac{x+3}{x^2-3x} - \frac{1}{x^2-9}$ | (Soluc: $\frac{x-3}{x+3}$) |
| p) $\frac{x-y}{xy} + \frac{y-z}{yz}$ | (Soluc: $\frac{x-z}{xz}$) | η) $\frac{3x}{x-1} - \frac{1}{x+1} - \frac{2x^2}{x^2-1}$ | (Soluc: $\frac{x+1}{x-1}$) |
| q) $x + \frac{1}{x}$ | (Soluc: $\frac{x^2+1}{x}$) | | |