Factorisations

Factoriser ou simplifier par factorisation les expressions suivantes :

$(x+1)(x-3)+(x-2)(x-3) = (x-3)\left((x+1)+(x-2)\right) = (x-3)(x+1+x-3) = (x-3)(2x-2)$

$(3x+5)(x+2)-(x+2)(2x+1) = (x+2)\left((3x+5)-(2x+1)\right) = (x+2)(3x+5-2x-1) = (x+2)(x+4)$

$4x^2-9 = (2x)^2-3^2 = (2x-3)(2x+3)$

$(2n+3)^2-(n-5)^2 = \left((2n+3)+(n-5)\right)\left((2n+3)-(n-5)\right) = (2n+3+n-5)(2n+3-n+5) = (3n-2)(n+8)$

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

$e^{3x}-2e^x e^x \times e^{2x}-2e^x = e^x\left(e^{2x}-2\right)$

$e^{2x}-2e^x+1 = (e^x)^2-2e^x+1 = (e^x-1)^2$

$\dfrac{a^{10}\times a^{-2}}{a^{-5}} = a^{13}$

$\dfrac{7a-7b}{14} = \dfrac{7(a-b)}{7\times 2} = \dfrac{a-b}{2}$

$\dfrac{(n+2)(n+1)-(n+2)^2(3n+5)}{(n+2)^3} = \dfrac{(n+2)(n+1)-(n+2)(n+2)(3n+5)}{(n+2)(n+2)(n+2)} = \dfrac{(n+1)-(n+2)(3n+5)}{(n+2)(n+2)}$