$$(-30x^4y^3+15x^3y^2-60x^2y^2):(-15x^2y^2)=$$

$$=\frac{-2\cdot 15x^2y^2\cdot x^2\cdot y+15\cdot x^2y^2\cdot x-15\cdot x^2y^2\cdot 4}{-15\cdot x^2y^2}=$$

$$=\frac{\cancel{15x^2y^2}^{\,1}\cdot(-2x^2y+x-4)}{-\cancel{15x^2y^2}^{\,1}}=\frac{-2x^2y+x-4}{-1}=-(-2x^2y+x-4)=$$

$$=2x^2y-x+4$$

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

$$(2x+1)(2x-1)-(2x-3)\cdot(3+2x)-(x-2)^2=$$

$$=(2x)^2-1^2-(4x^2-9)-(x^2-2\cdot x\cdot 2+2^2)=$$

$$=\cancel{4x^2}-1\underbrace{-\cancel{4x^2}+9-x^2+4x-4}=-x^2+4x+4$$

$$(3x-4)\cdot(3x+4)-(3x-5)^2=$$

$$=(3x)^2-4^2-[(3x)^2-2\cdot 3x\cdot 5+5^2]=$$

$$=\cancel{9x^2}-16-\cancel{9x^2}+30x-25=30x-41$$

$$(x-4)(x+4)-(x+1)\cdot[2\cdot(x-3)-(x-5)\cdot(x+2)]=$$

$$=x^2-4^2-(x+1)\cdot[2x-6-(x^2+2x-5x-10)]=$$

$$=x^2-4-(x+1)\cdot[2x-6-(x^2-3x-10)]=$$

$$=x^2-4-(x+1)\cdot(2x-6-x^2+3x+10)=$$

$$=x^2-4-(x+1)\cdot(-x^2+5x+4)=$$

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

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

$$=x^2-4+x^3-4x^2-9x-4=x^3-3x^2-9x-8$$