1. $-(xy+1)(xy-1)+(xy+1)^2-2xy-1$

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

$=-x^2y^2+1+x^2y^2+1+2xy-2xy-1=$ **1**

2. $(2a+1)^3+(2a-1)^3-4a(4a^2+3)+2$

$=8a^3+12a^2+6a+1+8a^3-12a^2+6a-1-16a^3-12a+2=$ **2**

3. $(3x-y^2)^2-(3x+y^2)(3x-2y^2)-y^2(y^2-3x+2y^2)+3$

$=9x^2-6xy^2+y^4-(9x^2-6xy^2+3xy^2-2y^4)-y^4+3xy^2-2y^4+3=$

$=9x^2-6xy^2+y^4-9x^2+6xy^2-3xy^2+2y^4-y^4+3xy^2-2y^4+3=$ **3**

4. $(5ab-3a)^2-2(5ab-3a)(3a+5ab)+(4a+5ab)^2-43a^2-10a^2b+4$

$=25a^2b^2-30a^2b+9a^2-2(25a^2b^2-9a^2)+16a^2+40a^2b+25a^2b^2-43a^2-10a^2b+4=$

$=25a^2b^2-30a^2b+9a^2-50a^2b^2+18a^2+16a^2+40a^2b+25a^2b^2-43a^2-10a^2b+4=$ **4**

5. $[-2a(-a^2b)^2]+(-2a)^3(-ab)^2-(-a)^5(-4b)^2+(-3a)^0-6a^5b^2+4$

$=[-2a(a^4b^2)]+(-8a^3)(a^2b^2)-(-a^5)(16b^2)+1-6a^5b^2+4=$

$=-2a^5b^2-8a^5b^2+16a^5b^2+1-6a^5b^2+4=$ **5**

6. $[(a-1)(a+1)(a^2+1)]^2-[(2a-1)(2a+1)(4a^2+1)]^2+255a^8-30a^4+6$

$=[(a^2-1)(a^2+1)]^2-[(4a^2-1)(4a^2+1)]^2+255a^8-30a^4+6=$

$=(a^4-1)^2-(16a^4-1)^2+255a^8-30a^4+6=$

$=a^8-2a^4+1-(256a^8-32a^4+1)+255a^8-30a^4+6=$

$=a^8-2a^4+1-256a^8+32a^4-1+255a^8-30a^4+6=$ **6**

7. $a\,(a-2b)^3-[(a+2b)^2-(2a+b)^2]^2+2ab\,(3a^2+4b^2-15ab)+8a^4+9b^4+7$

$=a\,(a^3-6a^2b+12ab^2-8b^3)-[a^2+4ab+4b^2-(4a^2+4ab+b^2)]^2+6a^3b+8ab^3+$
$-30a^2b^2+8a^4+9b^4+7=$

$=a^4-6a^3b+12a^2b^2-8ab^3-(a^2+4ab+4b^2-4a^2-4ab-b^2)^2+6a^3b+8ab^3+$
$-30a^2b^2+8a^4+9b^4+7=$

$=a^4-6a^3b+12a^2b^2-8ab^3-(3b^2-3a^2)^2+6a^3b+8ab^3-30a^2b^2+8a^4+9b^4+7=$

$=a^4-6a^3b+12a^2b^2-8ab^3-(9b^4-18a^2b^2+9a^4)+6a^3b+8ab^3-30a^2b^2+8a^4+9b^4+7=$

$=a^4-6a^3b+12a^2b^2-8ab^3-9b^4+18a^2b^2-9a^4+6a^3b+8ab^3-30a^2b^2+8a^4+9b^4+7=7$

Esegui la seguente divisione applicando la regola di Ruffini:

$(4x^3+7x^2+3x):(x+1)$

	4	7	3	0
-1		-4	-3	0
	4	3	0	0

$Q(x)=4x^2+3x$

$R(x)=0$