

$$a) (2m + n)(6m + 2n) - (m - 3n)(8n + 16m);$$

$$б) (x - 1)(4x - 6y) + (x + 1)(18y - 12x);$$

$$в) (2a + 1)(5a - 15) + (30 - 10a)(a - 2);$$

$$г) 2a(a + 2)^2 - 3b(a + 2);$$

$$д) (x - 2)^2(x - 3) + (x - 2)(x - 3)^2;$$

$$е) 3m(m + 2n) - 2n(m + 2n)^2;$$

$$ж) (p + 3q)^2(p - q) - (p + 3q)(p - q)^2.$$

$$(2m+n)(6m+2n)-(m-3n)(8n+16m)$$

$$(2m+n)*6m+(2m+n)*2n - (m-3n)*8n-(m-3n)*16m =$$

$$6m*2m+6m*n+2n*2m+2n*n-8n*m-8n*(-3n)-16m*m-16m*(-3n) =$$

$$12m^2+6mn+4nm+2n^2-8nm+24n^2-16m^2+48mn =$$

$$mn(6+4-8+48) + n^2(2+24)+m^2(12-16) = 50mn+26n^2-4m^2$$

$$(x-1)(4x-6y)+(x+1)(18y-12x) = (x-1)*4x-(x-1)*6y+(x+1)*18y-(x+1)*12x =$$

$$4x*x-4x*1-x*6y-1*(-6y)+18y*x+18y*1-12x*x-12x*1 = 4x^2-4x-6yx+6y+18xy+18y-12x^2-12x = x^2(4-12) + x(-4-12)+xy(-6+18)+y(6+18) =$$

$$-8x^2-16x+12xy+24y$$

$$(2a+1)(5a-15)+(30-10a)(a-2) = (2a+1)*5a-(2a+1)*15+(30-10a)*a-(30-10a)*2 = 2a*5a+5a*1-15*2a-15*1+a*30+a*(-10a)-2*30-2*(-10a) =$$

$$10a^2+5a-30a-15+30a-10a^2-60+20a = a^2(10-10) + a(5-30+30+20) -15-60 =$$

$$25a-15-60 = 25a-75$$

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

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

$$(a+2)^2= a^2+2*2a+2^2 = a^2+4a+4$$

$$2a(a+2)^2-3b(a+2) = 2a*(a^2+4a+4)-3ba-6b= 2a^3+8a^2+8a-3ab-6b$$

$$(x-2)^2(x-3)+(x-2)(x-3)^2 = (x^2-2*2x+2^2)(x-3)+(x-2)(x^2-2*3x+3^2) =$$

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

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

$$x^3-3x^2-4x^2+12x+4x-12+x^3-2x^2-6x^2+12x+9x-18 =$$

$$x^2(-3-4-2-6) + x(12+4+12+9) + x^3(1+1) - 12 - 18 = -15x^2+37x+2x^3-30$$

$$3m(m+2n)-2n(m+2n)^2 = 3m^2+3m2n-2n(m^2+2m2n+(2n)^2) = 3m^2+6mn-2n(m^2+4mn+4n^2) =$$

$$3m^2+6mn-2n*m^2-2n*4mn-2n*4n^2 = 3m^2+6mn-2nm^2-8mn^2-8n^3$$

$$(p+3q)^2(p-q)-(p+3q)(p-q)^2 = (p^2+2*3qp+(3q)^2)(p-q)-(p+3q)(p^2-2pq+q^2) =$$

$$(p^2+6qp+9q^2)(p-q)-(p+3q)(p^2-2pq+q^2) = (p-q)*p^2+(p-q)*6qp+(p-q)*9q^2-(p+3q)*p^2-(p+3q)*(-2pq)-(p+3q)*q^2 =$$

$$p^2*p-p^2*q+6qp*p-6qp*q+9q^2*p-9q^2*q-p^2*p-p^2*3q+2pq*p+2pq*q-3q^2*p-3q^2*3q =$$

$$p^3-qp^2+6qp^2-6pq^2+9pq^2-9q^3-p^3-3qp^2+2qp^2+6ppq^2-pq^2-3q^3 =$$

$$q^3(-9-3) + p^3(1-1) + qp^2(-1+6-3+2) + pq^2(-6+9+6-1) = -12q^3+4qp^2+8pq^2$$