

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

$$4a^2 + 4ab + b^2 = 4a^2+2ab+2ab+b^2= 2a(2a+b) + b(2a+b) = (2a+b) (2a+b) = (2a+b)^2$$

$$x^2-5x+6= x^2-2x-3x+6 = x(x-2) - 3(x-2) = (x-2) (x-3)$$

$$x^2+5x-6= x^2+2x+3x-6 = x (x+2) + 3(x-2)$$

$$x^2+5x-6= x^2 +6x -x -6 = x^2-x+6x-6 = x(x-1)+6(x-1) = (x-1) (x+6)$$

$$2x^2-5x + 3 = 2x^2-2x-3x+3 = 2x(x-1) - 3(x-1) = (x-1) (2x-3)$$

$$35a^2+2ab-b^2= 35a^2-5ab+7ab-b^2 = 5a(7a-b)+b(7a-b) = (7a-b) (5a+b)$$

$$10a^2+9ab-9b^2= 10a^2-1ab+10ab-9b^2=10a(a+b)-b(a+9b)$$

$$10a^2-3ab+12ab-9b^2=10a^2+12ab-3ab-9b^2=$$

$$=2a(5a+6b)-3b(a+3b)$$

$$10a^2-6ab+15ab-9b^2=10a^2+15ab-6ab-9b^2=$$

$$=5a(2a+3b)-3b(2a+3b)=(2a+3b)(5a-3b)$$

$$a^2+2bc+b^2+c^2+2ab+2ac=a^2+2ab+2ac + 2bc+b^2+c^2 =$$

$$=a(a+2b+2c) + b(2c+b+c^2)$$

$$a^2+bc+bc+b^2+c^2+ab+ab+ac+ac=$$

$$a^2+ab+ac + bc+b^2ab + bc+ac+c^2 = a(a+b+c) + b(c+b+a) + c(b+a+c) =$$

$$(a+b+c) (a+b+c) = (a+b+c)^2$$

$$4a^2+9b^2+c^2+12ab-6bc-4ac = 4a^2+9b^2+c^2 +6ab+6ab - 3bc-3bc -2ac-2ac =$$

$$4a^2+6ab-2ac + 9b^2+6ab-3bc + c^2-3bc-2ac$$

$$= 2a(2a+3b-c) + 3b(3b+2a-c) - c(-c+3b+2a) = (2a+3b-c) (2a+3b-c) = (2a+3b-c) ^2$$