Ａコース

① x^2+6x+9

$=x^2+(3+3)x+3\times3$

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

② $a^2+18a+81$

$=a^2+(9+9)a+9\times9$

$=(a+9)(a+9)=(a+9)^2$

③ x^2-4x+4

$=x^2+(-2-2)x-2\times-2$

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

④ $a^2-8a+16$

$=x^2+(-4-4)x-4\times-4$

$=(x-4)(x-4)=(x-4)^2$

⑤ $49x^2+14x+1$

$=(7x)^2+14a+1^2$

$=(7x+1)^2$

⑥ $9x^2+12x+4$

$=(3x)^2+12x+(2)^2$

$=(3x+2)^2$

⑦ a^2+2a+1

$=a^2+(1+1)a+1\times1$

$=(a+1)(a+1)=(a+1)^2$

⑧ $x^2+8xy+16y^2$

$=x^2+(4+4)xy+(4\times4)y^2$

$=(x+4y)(x+4y)=(x+4y)^2$

⑨ $9a^2-42ab+49b^2$

$=(3a)^2-42ab+(7b)^2$

$=(3a-7b)^2$

⑩ $25x^2+10xy+y^2$

$=(5x)^2+10xy+y^2$

$=(5x+y)^2$

⑪ $x^2+3x+\dfrac{9}{4}$

$=x^2+(\dfrac{3}{2}+\dfrac{3}{2})x+\dfrac{3}{2}\times\dfrac{3}{2}$

$=(x+\dfrac{3}{2})(x+\dfrac{3}{2})=(x+\dfrac{3}{2})^2$

⑫ $x^2+\dfrac{2}{3}xy+\dfrac{1}{9}y^2$

$=x^2+(\dfrac{1}{3}+\dfrac{1}{3})x+\dfrac{1}{3}\times\dfrac{1}{3}$

$=(x+\dfrac{1}{3})(x+\dfrac{1}{3})=(x+\dfrac{1}{3})^2$

Ｂコース

① x^2+4x+4

$=x^2+(2+2)x+2\times2$

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

② $a^2+20a+100$

$=a^2+(10+10)a+10\times10$

$=(a+10)(a+10)=(a+10)^2$

③ $x^2-40x+400$

$=x^2+(-20-20)x-20\times-20$

$=(x-20)(x-20)=(x-20)^2$

④ $a^2-10a+25$

$=a^2+(-5-5)a-5\times-5$

$=(a-5)(a-5)=(a-5)^2$

⑤ $4x^2-20x+25$

$=(2x)^2-20x+5^2$

$=(2x-5)^2$

⑥ $16y^2-72y+81$

$=(4y)^2-72y+9^2$

$=(4y-9)^2$

⑦ $\dfrac{1}{9}x^2+4x+36$

$=(\dfrac{1}{3}x)^2+4x+6^2$

$=(\dfrac{1}{3}x+6)^2$

⑧ $x^2+16xy+64y^2$

$=x^2+(8+8)xy+(8\times8)y^2$

$=(x+8y)(x+8y)=(x+8y)^2$

⑨ $4x^2y^2-12xy+9$

$=(2xy)^2-12xy+3^2$

$=(2xy-3)^2$

⑩ $\dfrac{9}{16}a^2-\dfrac{3}{2}ab$

$=(\dfrac{3}{4}a)^2-\dfrac{3}{2}ab+b^2$

$=(\dfrac{3}{4}a-b)^2$

⑪ $36a^2+60a+25$

$=(6a)^2+60a+5^2$

$=(6a+5)^2$

⑫ $25x^2-10x+1$

$=(5x)^2-10x+1^2$

$=(5x-1)^2$

Ｃコース

① $x^2+12x+36$

$=x^2+(6+6)x+6\times6$

$=(x+6)(x+6)=(x+6)^2$

② $x^2-14x+49$

$=x^2+(-7-7)x-7\times-7$

$=(x-7)(x-7)=(x-7)^2$

③ x^2+2x+1

$=x^2+(1+1)x+1\times1$

$=(x+1)(x+1)=(x+1)^2$

④ $x^2+8xy+16y^2$

$=x^2+(4+4)xy+(4\times4)y^2$

$=(x+4y)(x+4y)=(x+4y)^2$

⑤ $9x^2+6x+1$

$=(3x)^2+6x+1^2$

$=(3x+1)^2$

⑥ $4x^2-20x+25$

$=(2x)^2-20x+5^2$

$=(2x-5)^2$

⑦ $1+16x+64x^2$

$=1^2+16x+(8x)^2$

$=(1+8x)^2$

⑧ $49x^2-14xy+y^2$

$=(7x)^2-14xy+y^2$

$=(7x-y)^2$

⑨ $9a^2-12ab+4b^2$

$=(3a)^2-12ab+(2b)^2$

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

⑩ $4x^2-36x+81$

$=(2x)^2-36x+9^2$

$=(2x-9)^2$

⑪ $81x^2+90ax+25a^2$

$=(9x)^2+90ax+(5a)^2$

$=(9x+5a)^2$

⑫ $64x^4-112x^2+49$

$=(8x)^4-112x^2+7^2$

$=(8x^2-7)^2$