三校教作37   和中鐘定桁

ex.1 展開

1)

$(a+b)^5$

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

$= (a^4+4a^3b+6a^2b^2+4ab^3+b^4)(a+b)$

$= a^5+5a^4b+10a^3b^2+10a^2b^3+5ab^4+b^5$ #

2)

$(a+b)^6$

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

$= a^6+6a^5b+15a^4b^2+20a^3b^3+15a^2b^4+6ab^5+b^6$ #

3)

$(x+y+z)^2$

$= (x+y+z)(x+y+z)$

$= x^2+y^2+z^2+2xy+2yz+2zx$ #

4)

$(x+y+z)^3$

$= (x^2+2xy+y^2+2yz+z^2+2xz)(x+y+z)$

$= x^3+x^2y+x^2z+2x^2y+2xy^2+2xyz+y^2x+y^3+y^2z$

$\quad +2yzx+2y^2z+2yz^2+z^2x+z^2y+z^3+2x^2z+2xyz+2xz^2$

$= x^3+3x^2y+3x^2z+3xy^2+6xyz+y^3+3y^2z+3yz^2+3z^2x+3xz^2+z^3$

$= x^3+y^3+z^3+3x^2y+3xy^2+3y^2z+3yz^2+3z^2x+3zx^2+6xyz$ #