$$\begin{aligned} z &= (a+b)^4 = (a+b)^2(a+b)^2 \\ &= \left(a^2 + 2ab + b^2\right)\left(a^2 + 2ab + b^2\right) \\ &= a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4 \end{aligned} \tag{1}$$

$$z = (a+b)^4 = (a+b)^2(a+b)^2 \tag{2}$$
$$= \left(a^2 + 2ab + b^2\right)\left(a^2 + 2ab + b^2\right) \tag{3}$$
$$= a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4 \tag{4}$$

$$\begin{aligned} z &= (a+b)^4 = (a+b)^2(a+b)^2 \\ &= \left(a^2 + 2ab + b^2\right)\left(a^2 + 2ab + b^2\right) \\ &= a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4 \end{aligned} \tag{5, 6}$$

$$\begin{aligned} z &= (a+b)^4 \\ z &= (a+b)^2(a+b)^2 \\ z &= \left(a^2 + 2ab + b^2\right)\left(a^2 + 2ab + b^2\right) \\ z &= a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4 \end{aligned} \tag{7}$$

$$\begin{aligned} z &= (a+b)^4 = (a+b)^2(a+b)^2 \\ &= \left(a^2 + 2ab + b^2\right)\left(a^2 + 2ab + b^2\right) \\ &= a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4 \end{aligned} \tag{8, 9}$$

Function:

$$I_A(a) = \begin{cases} 1 & a \in A \\ 0 & a \notin A \end{cases}$$