## Practice!

(1) Write a formula $\varphi_{z=(x, y)}(x, y, z)$ that expresses $z=(x, y)$.
(2) Prove that $(x, y)=(u, v)$ holds iff $x=u$ and $y=v$.
(3) Write a formula $\varphi_{C \in A \times B}(A, B, C)$ that expresses $C \in A \times B$.
(4) (a) Give examples of a set $A$ satisfying $A \subseteq \mathcal{P}(A)$ and a set $B$ satisfying $B \nsubseteq \mathcal{P}(B)$.
(b) How many three-element sets $A$ satisfy $A \subseteq \mathcal{P}(A)$ ?

