

For a family of sets $\{X_i\}_{i=1}^3$, consider $Y := \bigcup_{i=1}^3 X_i$.
Let $F : \mathbb{Z} \rightarrow \mathbb{R}$ be a mapping defined by

$$F(n) := \sqrt{\max(n, 10)}, \quad (1)$$

(2)

and define $z = F(\#Y)$, which is not meaningful.