

For a family of sets $\{X_i\}_1^{23}$, consider $Y := \bigcup_{i=1}^{23} X_i$.
Let $F: \mathbb{Z} \rightarrow \mathbb{R}$ be a mapping defined by

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

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