Functions, continued

Functions may or may not have nice closed forms.
Consider functions mapping $\mathbb{R} \to \mathbb{R}$:

1. $f(n) = n^2$
2. $f(n) = 1$ if $n \geq 0$ and $f(n) = -1$ if $n < 0$
3. $f(n) = n$ if $n \in \mathbb{Z}$ and $f(n) = \pi$ if $n \in \mathbb{R} \setminus \mathbb{Z}$

Or something like this: $f : \{0, 1, 2, 3\} \to \{3, 5\}$ given by:

- $f(0) = 3$
- $f(1) = 5$
- $f(2) = 3$
- $f(3) = 3$

Question: How many different functions are there from $\{0, 1, 2, 3\}$ to $\{3, 5\}$?