**Answer on Question #75633 – Math – Discrete Mathematics**

Consider the function $f$.

Let's denote the set $\{a, b, c\}$ as set $A$ and the set $\{1, 2, 3\}$ as set $B$. Then function $f$ is a mapping $f: A \rightarrow B$, $f(a) = 2, f(b) = 3, f(c) = 1$.

a) $f$ is an injective function ($f$ is an "into" function) because for $\forall m, n \in \mathrm{A}: m \neq n\ f(m) \neq f(n)$ .
b) $f$ is a surjective mapping ($f$ is an "onto" function), because $f(A) = B$.
c) $f$ is an injective mapping and $f$ is an surjective mapping , therefore $f$ is a bijective mapping. Then there is an inverse mapping $f^{-1}: B \rightarrow A$, which can be defined as follows:

$$\forall\ y \in B\ \exists!\ x \in A: f(x) = y. Then\ x = f^{-1}(y).$$

As a result, $a = f^{-1}\ (2), b\ = f^{-1}(3),\ c = f^{-1}\ (1)$.