1. Let $A = \{1, 2, 3\}$ and $B = \{4, 5, 6\}$ and $f = \{(1, 5), (2, 6), (3, 5)\}$. If $f$ a function from $A$ to $B$? If so, is it one-to-one? onto? What is $f(1)$?

2. Let $A = \{1, 2, 3\}$ and $B = \{4, 5, 6\}$ and $f = \{(1, 5), (2, 6), (3, 4)\}$. If $f$ a function from $A$ to $B$? If so, is it one-to-one? onto? What is $f(1)$?

3. Let $A = \{1, 2, 3\}$ and $B = \{4, 5, 6\}$ and $f = \{(1, 5), (2, 5), (3, 5)\}$. If $f$ a function from $A$ to $B$? If so, is it one-to-one? onto? What is $f(1)$?

4. Let $A = \{1, 2, 3\}$ and $B = \{4, 5, 6\}$ and $f = \{(1, 5), (2, 6), (2, 5), (3, 4)\}$. If $f$ a function from $A$ to $B$? If so, is it one-to-one? onto? What is $f(1)$?

5. Let $A = \{1, 2, 3, 4\}$ and $B = \{a, b, c, d, e\}$. Give an example of a function $f : A \rightarrow B$ which is one-to-one. Give a different example of a function $g : A \rightarrow B$ which is not one-to-one. Is there a function $h : A \rightarrow B$ which is onto?

6. Let $A = \{1, 2, 3, 4\}$ and $B = \{a, b, c, d, e\}$. Give a function $f : B \rightarrow A$ which is not one-to-one. Give an example of a function $g : B \rightarrow A$ which is not onto. Is there a function $h : B \rightarrow A$ which is one-to-one?

7. Give an example of a function $f : \mathbb{N} \rightarrow \mathbb{N}$ which is not one-to-one but is onto. Give an example of a $g : \mathbb{N} \rightarrow \mathbb{N}$ which is not onto but is one-to-one. Give an example of a function $h : \mathbb{N} \rightarrow \mathbb{N}$ which is neither one-to-one nor onto.