

1. Let $A = \{1, 2, 3\}$ and $B = \{w, x, y, z\}$. How many onto functions $f: A \rightarrow B$ are possible?

(3 points)

✓ A. 0

B. 3

C. 4

D. 12

2. Let $A = \{1, 2, 3\}$ and $B = \{x, y, z\}$. Which one of the following functions from A to B are **not** onto?

(3 points)

- A. $\{(1, x), (2, y), (3, z)\}$
- B. $\{(2, x), (3, y), (1, z)\}$
- ✓ C. $\{(3, y), (2, x), (1, x)\}$
- D. $\{(3, z), (1, y), (2, x)\}$

3. Let $A = \{1, 2, 3\}$ and $B = \{x, y, z\}$. Which one of the following functions from A to B is not a 1-to-1 correspondence?

(3 points)

- A. $\{(1, x), (2, y), (3, z)\}$
- B. $\{(2, x), (3, y), (1, z)\}$
- C. $\{(3, y), (2, z), (1, x)\}$
- ✓ D. $\{(2, z), (1, y), (2, x)\}$