

Name:

For each of the following five questions, four possible answers are provided, but only one of them is correct: write the corresponding letter in the box! (Recall: injective = one-to-one; surjective = onto.)

1] Let $f: S \rightarrow T$ be a function. Let s_1 and s_2 be elements of S such that $s_1 = s_2$.
 What do we need to know about f to conclude that $f(s_1) = f(s_2)$?

- A] Nothing: this is true for all functions f .
- B] We need f to be injective.
- C] We need f to be surjective.
- D] We need f to be bijective.

2] Let $f: S \rightarrow T$ be a function. Let s_1 and s_2 be elements of S such that $f(s_1) = f(s_2)$.
 What do we need to know about f to conclude that $s_1 = s_2$?

- A] Nothing: this is true for all functions f .
- B] We need f to be injective.
- C] We need f to be surjective.
- D] We need f to be bijective.

3] Let $f: S \rightarrow T$ be a function. Let t be an element of T .
 What do we need to know about f to conclude that $t = f(s)$ for some $s \in S$?

- A] Nothing: this is true for all functions f .
- B] We need f to be injective.
- C] We need f to be surjective.
- D] We need f to be bijective.

4] Let $f: S \rightarrow T$ be a function. Let t be an element of T .
 What do we need to know about f to conclude that $t = f(s)$ for one unique $s \in S$?

- A] Nothing: this is true for all functions f .
- B] We need f to be injective.
- C] We need f to be surjective.
- D] We need f to be bijective.

5] Let $f: S \rightarrow T$ be a function. Let s be an element of S .
 What do we need to know about f to conclude that $f(s) = t$ for one unique $t \in T$?

- A] Nothing: this is true for all functions f .
- B] We need f to be injective.
- C] We need f to be surjective.
- D] We need f to be bijective.