

Math 122 In-Class Assignment 5 - Solutions

1. Answer the following questions for the sets $A = \{x, y, z\}$ and $B = \{\emptyset, \{x\}, y, z\}$.

Indicate whether each statement is **True (T)** or **False (F)**. No reasons are necessary.

- (a) $z \in A$ **True**
- (b) $A \in B$ **False**
- (c) $\emptyset \in B$ **True**
- (d) $x \in B$ **False**
- (e) $\{x\} \in B$ **True**

2. Consider the set $X = \{\emptyset, 1, \{2, 3, 4\}\}$. How many elements does the set X have?

The set X has 3 elements. The elements are \emptyset , 1, and $\{2, 3, 4\}$.

3. Consider the set $B = \{\emptyset, \{x\}, y, z\}$. How many subsets does B have?

The set B has 4 elements, so B has $2^4 = 16$ subsets.