

CSI 30 LECTURE NOTES (Ojakian)

Topic 5: Introduction to Sets

OUTLINE

(References: 2.1)

1. Sets

1. Sets - Examples and Definitions

- (a) DEF: Any collection of mathematical objects, where order and repetition do not matter
- (b) Examples.
 - i. finite and infinite (including integers Z)
 - ii. Where elements are tuples
 - iii. Empty set
- (c) Membership (and notation)

2. Describing Sets

- (a) Listing elements
- (b) Set Builder Notation
- (c) Venn Diagrams (should have a Universal set)

3. Issues with Sets

- (a) Cardinality (including finite versus infinite). Notation: $|S|$
- (b) Subset (and notation)

4. Exercises

Section 2.1: 1, 2, 5 - 16, 18, 20, 21, 22