

CSCI 301, Winter 2018

Math Exercises # 1

YOUR NAME HERE

Due date: Wednesday, January 24, midnight.

Note: to make grading easier, please include the question with the answer.

Exercises for Section 1.1

C. Find the following cardinalities

30. $|\{\{1, 4\}, a, b, \{\{3, 4\}\}, \{\emptyset\}\}|$

Exercises for Section 1.3

A. List all the subsets of the following sets.

8. $\{\{0, 1\}, \{0, 1, \{2\}\}, \{0\}\}$

Exercises for Section 1.4

A. Find the indicated sets.

12. $\{X \in \mathcal{P}(\{1, 2, 3\}) : 2 \in X\}$

B. Suppose that $|A| = m$ and $|B| = n$. Find the following cardinalities.

18. $|\mathcal{P}(A \times \mathcal{P}(B))|$

Exercises for Section 2.10 Negate the following sentences.

8. If x is a rational number and $x \neq 0$, then $\tan(x)$ is not a rational number.