

# WORKSHEET 6

Date: 10/13/2021

Name:

1. Small review of chapter 3, approximately 5 minutes.

2. Prove the following important statement:

$$\forall \epsilon > 0, |x - y| \leq \epsilon \Leftrightarrow x = y.$$

3. Suppose  $A \cap C \subseteq B$  and  $a \in C$ . Prove that  $a \notin A \setminus B$ .

# QUIZ

Date: 10/13/2021

Write your name on the back of this paper.

1. Let  $a, b, c \in \mathbb{Z}$ . If  $a|b$  and  $b|c$  then  $a|c$ .

(a) (1pt) Write down the givens in this statement.

(b) (1pt) What is the goal? Write down what you want to prove.

(c) (3pts) Prove the statement above.

2. Suppose  $A \subseteq B$ , and  $A$  and  $C$  are disjoint. Prove that  $A \subseteq B \setminus C$ .

(a) (1pt) Write down the givens in this statement.

(b) (1pt) What is the goal? Write down what you want to prove.

(c) (3pts) Prove the statement above.