Ma2201/CS2022
Quiz 0010

Foundations of C.S.

Spring, 2021

PRINT NAME: _____

$\mathcal{SIGN}$: _____

1. (6 pts) Let P, Q and R be sets. Prove carefully, **using the double inclusion method** that

$$(R \cup P) \cap Q = (P \cap Q) \cup (Q \cap R).$$

2. (4 pts) Suppose $f : \mathbb{Z} \to \mathcal{P}(\mathbb{Z})$ and $g : \mathcal{P}(\mathbb{Z}) \to \mathbb{Z}$ are functions.

Check each of the following statements which *must* be true, and write a brief explanation why each box is, or is not, checked.

☐ f is not one-to-one.

☐ f is not onto.

☐ g is one-to-one.

☐ g is onto.