

PREPARED BY:

DATE:

PROJECT TITLE:

Q1

$$A = \{-1, 0, 1\}$$

$$B = \{-1, 0, 1, 2\}$$

Define $f: A \rightarrow B$ by $f(x) = x^2 \quad \forall x \in A$

Claim:

Not injection:

$$f(-1) = f(1), \text{ but } -1 \neq 1$$

Not surjection:

Take 2 ($2 \in B$)

$$f(-1) = 1$$

$$f(0) = 0$$

$$f(1) = 1$$

$$\nexists x \in A \Rightarrow f(x) = 2$$

Hence, f is not a surjection.

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Q2:

let A and B be 2 finite sets

let $C = |A \times B|$
then 2^C binary relations on A and B