Challenge

- Prove that for any non-empty set $A$, there does not exist a bijective function from $A$ to $P(A)$ where $P(A)$ is power set of $A$ (remember that $A$ could be infinite).
Good Morning, Colleagues
Good Morning, Colleagues

Are there any questions?
Logistics

- Start/keep reviewing everything we’ve done
Logistics

- Start/keep reviewing everything we’ve done
- Thursday and Tuesday is more advanced material
Logistics

• Start/keep reviewing everything we’ve done

• Thursday and Tuesday is more advanced material
  – Different types of infinity
Some important concepts

- Sets vs. tuples
Some important concepts

- Sets vs. tuples
- Cartesian product: deck of cards, plane
Some important concepts

• Sets vs. tuples

• Cartesian product: deck of cards, plane

• injection, surjection, bijection
Prove that...

- $X \subseteq A \cap B \iff X \subseteq A \land X \subseteq B$
Prove that . . .

- \( X \subseteq A \cap B \iff X \subseteq A \land X \subseteq B \)

- \( P(A \cap B) = P(A) \cap P(B) \) (use previous problem’s result)
Prove that...

- \( A \subseteq B \) iff \( P(A) \subseteq P(B) \).
Prove that...

- $A \subseteq B \iff P(A) \subseteq P(B)$.

- $(A \cup B) \times C = (A \times C) \cup (B \times C)$. 
Assignments for Thursday

- Look at fourth homework
- Module 16.5
Assignments for Thursday

- Look at fourth homework
- Module 16.5