Q1.

a)

b)

c)
e)

Diagram showing relationships between entities:

- Professor
- Course
- Teaches (relationship)
- Address
- Lives At
- Phone
- Has (relationship)
- SSN
- Name
- Type
- Number
- Balance
- State
- City
- Street
- Number
Q2.

a) The set with all tuples (a,b) where one or both of the conditions below are true:
   a = 10 and b is any integer or null.
   a is any integer or null and b = 20.

b) The set containing exactly the tuple (10,20).

c) The set with all tuples (a, b) where a is any integer and is not null, and b is any integer or null.

d) The set of all tuples (a, b) where a and b are the same integer that is not null.

Q3.

a) CREATE VIEW CharactersPlayed (ActorName, ActorNationality, CharacterName, Year) AS
   SELECT A.name, A.nationality, S.character, M.year
   FROM Movies M, Actors A, StarsIn S
   WHERE A.actor_id = S.actor_id AND S.movie_id = M.movie_id;

b) SELECT DISTINCT C.ActorNationality
   FROM CharactersPlayed C
   WHERE C.CharacterName = 'Forrest Gump';

c) SELECT C.year, COUNT(DISTINCT C.ActorNationality) AS CountNationality
   FROM CharactersPlayed C
   GROUP BY C.year;