Review question #5

The six important properties of relations are:

1. Each relation in a database has a unique name.

2. An entry at the intersection of each row and column is atomic (or single valued).

3. Each row is unique.

4. Each attribute within a table has a unique name.

5. The sequence of columns is insignificant.

6. The sequence of rows is insignificant.

Review question #11

Describe how the following components of an E-R diagram are transformed to relations:

1. Regular entity type:

Each entity type is transformed to a simple relation. Each simple attribute of the entity type becomes an attribute of the relation.

1. Relationship (1:M):

A relation is created for each of the two entity types participating in the relationship. The primary key attribute of the entity on the one-side of the relationship becomes a foreign key in the relation on the many-side of the relationship.

1. Relationship (M:N):

A new relation is created to represent this relationship. The primary key for each of the participating entity types is included in this new relation.

1. Relationship (supertype/subtype):

A separate relation is created for the supertype and each of its subtypes. The primary key of the supertype is assigned to each subtype, as well as attributes that are unique to the subtype.

1. Multivalued attribute:

A new relation is created to replace the multivalued attribute. The primary key of this new relation consists of two attributes: the primary key of the original relation, plus the multivalued attribute itself.

1. Weak entity:

A new relation is created corresponding to the weak entity. The primary key of this relation consists of the primary key of the owner relation, plus the partial identifier of the weak entity type.

1. Composite attribute:

The simple component attributes of the composite attribute are included in the new relation.