The table below shows a sample booking for a guest at the XYZ chain of hotels:

HotelNo	GuestNo	HotelName	Hotel City	Hotel Zip	GuestName	Guest City	Guest Zip	DateFrom	Date To	Room No	RoomType	RoomPrice
3	232	Hilton	San Diego	83835	Brad VZ	Knoxville	37996	2012-11-28	2012-12-02	635	King	89.99

You may make the following assumptions about the data:

a. A hotel number uniquely identifies a hotel's name and zip code
b. A zip code uniquely identifies a city for both hotels and guests (not true in the real world, but true in our fantasy world)
c. A guest number uniquely identifies a guest's name and zip code
d. A room number and a hotel number uniquely determine a room type and price
e. A guest may not have overlapping reservations.
f. A room may not be double booked.

Answer the following questions:

a. Give an example of the following types of anamolies:
   - insert
   - update
   - delete
b. What are the functional dependencies for this relation?
c. What are the candidate keys for this relation?
d. Show how you would convert this relation to 2nd normal form, and show which functional dependencies you would use to create each new relation.
e. Show how you would convert the relations from 2nd to 3rd normal form, and show which functional dependencies you would use to create each new relation.
f. What is the name for the type of functional dependency used to convert a relation to 2nd normal form?
g. What is the name for the type of functional dependency used to convert a relation to 3rd normal form?