Using your knowledge of TAL Distributors, determine the functional dependencies that exist in the following

table. After determining the functional dependencies, convert this table to an equivalent collection of tables that

are in third normal form.

Item (ItemNum, Description, OnHand, Category, Price, (OrderNum,

OrderDate, CustomerNum, CustomerName, RepNum, LastName,

FirstName, NumOrdered, QuotedPrice))

1. Functional dependencies begin

ItemNum --> Description, OnHand,  Category, Price

OrderNum--> OrderDate, CustomerNum

CustomerNum --> CustomerName, RepNum

RepNum --> LastName, FirstName

ItemNum, OrderNum --> NumOrdered, QuotedPrice

end

Item(ItemNum, Description, OnHand, Category, Price)

Orders(OrderNum, OrderDate, CustomerNum, CustomerName, RepNum)

OrderLine(OrderNum, ItemNum, NumOrdered, QuotedPrice

1. List the functional dependencies in the following table that concern invoicing (an application TAL Distributors is

considering adding to its database), subject to the specified conditions. For a given invoice (identified by the Invoice-

Num), there will be a single customer. The customer’s number, name, and complete address appear on the invoice,

as does the date. Also, there may be several different items appearing on the invoice. For each item that appears,

display the item number, description, price, and number shipped. Each customer that orders a particular item pays

the same price. Convert this table to an equivalent collection of tables that are in third normal form.

Invoice (InvoiceNum, CustomerNum, LastName, FirstName, Street, City,

State, PostalCode, Date, (ItemNum, Description, Price, NumShipped))

Invoice --> InvoiceNum, CustomerNum, LastName, FirstName, Street, City, State, PostalCode, Date

ItemNum --> Description, Price, NumShipped

3nf

Item(ItemNum, Description, Price, NumShipped

3.

(InvoiceNum,CustomerNum,FirstName,LastName,Date)

(InvoiceNum,CustomerNum,Street,City,State,PostalCode)

(InvoiceNum, ItemNum, Description, Price,NumShipped,Date)