EXERCISE ON DIMENSIONAL MODEL

An online company requires the designing of a data warehouse to record the quantity and sales of its wines to its customers. The database is composed by the following tables:

CUSTOMER (C_Code, Name, Address, Phone, BDay, Gender)
WINE (W_Code, Wine_Name, Type, Vintage, CL_code, Prod_code)
COUNTRY(Country_Code,Country_Name)
CLASS (CL_Code, Name, Region,Country_code)
ORDER (C_Code, W_Code, Date, nrBottles, nrCases)
PRODUCER(Prod_Code,P_name,P_address)
PRICES(W_Code,Date,BottlePrice,CasePrice)

A customer inserts an order for a wine. Each wine has a class, a producer and each wine might have a different price every day (prices are stored in the table PRICES where the primary key is the wine code and the date).
Each type of wine is identified by a code.
IMPORTANT: a case always contains 12 bottles. But the CasePrice can be different from 12 times the price of a single bottle. You are required to:

i. Produce a star schema for the above relational diagram re-organizing all the data present on the relational diagram. The diagram should support the following queries and reports:
   1. A daily report showing the total revenue for each class of wine
   2. A weekly report showing the distribution of customers by country
   3. Show the list of Producers that sold more than “X” number of bottles in each quarter
   4. Show the average number of bottles of wine sold for each wine in each region
   5. Show the list of customer that did not buy any wine in the last 3 months
   6. Show the name of the bestselling wine each week by each class of wine

   Justify all your design choices.

ii. Using your dimensional model, how would you write the SQL query at point 4?

iii. Using your dimensional model, how would you write the SQL query at point 3?