problem 3:

Identify the grain in your dimensional design using the business needs as a guideline. You should then indicate relative storage requirements for the grain using the statistics for the data sources. Using the cardinality estimates provided, you should determine either the fact table size or sparsity and then compute the unknown grain size variable. For example, you should compute sparsity if the fact table size is given

Ans:

The most detailed grain is the combination of Merchandise or Service or SpecialEvent, Franchise, Member and date.

* 350 Franchise Rows
* 20 ServiceCategory Row,1 Special Event Row, Total = 21
* Days per year: 365
* 50000 Member Rows, 150 Member Rows\*200 Franchises , Total = 50000 + 150\*200 = 80000
* 500 Merchandise Rows, Total= 500
* 100,000 Service Purchase Rows,(300\*200) Special Events Purchase,450,000 Contains Rows
* Total Fact Table Size Increase = 100000+ 450000+60000 = 610000
* Sparsity estimate:
  + 1 - ( fact table size / product of dimensions )
  + (1 – ( 610000 / (350\*21\*500\*365\*80000) ) = 0.99999999431
  + The data cube has mostly missing cells with slightly more than 1% of cells with non zero values.