1. attributes:

F : {poor, average, good}

A : {inferior, normal, superior}

S : {bad, fair}

output classifications:

L : {yes , no}

There are 3\*3\*2 = 18 possible instances

1. Hypothesis space size is 2^18 = 262,144
2. Not consistent. According to the data, Alice can like restaurants that do not have good food and also cannot like restaurants that do have good food.
3. Version space includes instances with 2 yes's and 3 no's. This leaves 13 other instances that could be anything. Thus, the version space size is 2^13 = 8,192
4. By introducing the sum, the attributes of an instance now deterministically determine that instance's classification. Thus, there is only one hypothesis in the hypothesis space - the one that assigns "yes" to instances that have a positive sum and "no" to instances that do not.

Poor, inferior, bad

Poor, inferior, fair

Poor, normal, bad

Poor, normal, fair

Poor, superior, bad

Poor, superior, fair

Average, inferior, bad

Average, inferior, fair

Average, normal, bad

Average, normal, fair

Average, superior, bad

Average, superior, fair

Good, inferior, bad

Good, inferior, fair

Good, normal, bad

Good, normal, fair

Good, superior, bad

Good, superior, fair

1. Since the training examples have a deterministic classification, and since the hypothesis set only contains one function, the version space would be the entire hypothesis set (which is only 1 function).