

2a.

Answer: NO

Reason: IID is a primary key so it can not have NULL values. There are no ingredients for this new food so the IID will be NULL.

2b.

Design 1

Answer: NO

Reason: Rows 1 and 3 with chicken, since they have different amounts you would need to have 2 rows for chicken which mean 2 primary keys and that is not allowed

Design 2

ANSWER: NO

Reason: Rows 3 and 4 both have the same fid and since you can't have duplicate primary keys this is not allowed

Design 3

ANSWER: NO

Reason: Same as design 2, since the primary keys aren't unique in rows 3 and 4 this won't work.

Design 4

ANSWER: YES

Reason: This one fixes the issues of the previous designs by including a recipe table that holds the amount and that has 2 attributes for the primary key. This will prevent duplicate primary keys.