

Alfred and LaToya were celebrating their first anniversary by having dinner at a local restaurant. At the end of the meal they decided to share a dessert. They were deciding between red velvet cake and key lime pie. Alfred wasn't really in the mood for key lime pie, so he said, "You know key lime pie is not cooked; it is just a plain old raw pie." LaToya called him a liar and said it didn't matter they were having key lime pie. So the couple ordered key lime pie. Later that week, LaToya checked online and found out Alfred was right, key lime pie is not cooked in the oven. The recipe directions said to add lime juice to sweetened condensed milk. Stir till thickened and then pour the mixture into a pre-prepared pie shell.

Explain how lime juice causes sweetened condensed milk to thicken to a custard consistency. (Hint: lime juice is acidic; the pH of lime juice is ~2-3.)

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