(10 points)

(D) Huevos y Pimientos (1/2)

Paula went shopping while her mother was sick in bed. The only items that Paula had to buy were (according to her mother's instructions) "red peppers and cucumbers". On the way to the corner store, Paula thought more about her shopping order. It was clear that the peppers had to be red while the cucumbers didn't have to be red (after all, Paula didn't think that red cucumbers existed). Paula imagined what she would have had to do if her mom had sent her to buy "red peppers and grapefruit". In that case, she thought, maybe she would have to make sure that the grapefruit were red as well. Or maybe not... Paula was confused.

In linguistics, the problem pondered by Paula is called "attachment ambiguity". Does the adjective ("red") attach to (describe) the nearest noun ("peppers") only or does it attach to the entire noun phrase "peppers and cucumbers")? In some cases, world knowledge can help. We agree with Paula that cucumbers cannot be red so one of the possible interpretations of "red peppers and cucumbers" is actually unlikely. In other cases, e.g., "old boys and girls", both interpretations ("old boys and old girls" and "old boys and girls of any age") are reasonable.

Paula's best friend, Cecilia, speaks Spanish at home. Cecilia and Paula often help each other with homework or with household chores. On her way to the store, Paula ran into Cecilia and wanted to tell her about the linguistic problem that was on her mind. She remembered the Spanish words for "red" ("rojos" in plural) , "peppers" ("pimientos"), "and" ("y"), "cucumbers" ("pepinos"), and "grapefruit" ("pomelos" in plural) and also remembered that in Spanish the adjective comes after the noun that it describes (e.g., "pomelos rojos", literally meaning "grapefruit (plural) red" or "niñas pequeñas" which literally translates as "girls small"). When she told Cecilia that she was on her way to buy some "pimientos y pepinos rojos" ("peppers and cucumbers red"), Cecilia started to laugh. Paula realized that in her Spanish translation, not only did the cucumbers now appear to be red but it was now also unclear whether the peppers themselves *had to* be red.

D1. How could Paula translate each of the following phrases into Spanish and preserve all ambiguities ("uncertainties") as well as all certainties present in their English versions? (4 points)
a. red peppers and cucumbers (give two distinct answers that work —one per line)

b. red peppers and grapefruit (give one answer)

D2. A very popular children's book by Dr. Seuss is called "Green Eggs and Ham". Ignoring the actual contents of the book, can you determine based solely on the book's title whether these statements are true. (2 points each)

a. the eggs are unambiguously green (T/F) ☐

b. the ham is unambiguously green (T/F) ☐

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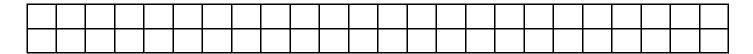
(10 points)
(D) Huevos y Pimientos (2/2)

D3. Consider the following translations from English into Spanish. (3 points)
ham = jamón
eggs = huevos
green (plural) = verdes

How would you translate the title of the book into Spanish (again disregard the actual translation, if you happen to know it) in order to preserve any ambiguities and certainties present in the English title?

This problem is based on the following paper: Kevin Knight and Irene Langkilde. Preserving Ambiguities in Generation via Automata Intersection. In Proceedings of AAAI 2000.