Translate the following sentences into Sentential Logic, assigning a sentence of your choice to a sentential letter.

Instructions:

a) Identify if the statement is a logical conjunction, negation or both. If it isn’t either of these two, mark it as being atomic.

b) If the statement is compound, separate the sentence into its independent statements and connect them into one long statement using ‘and’ and ‘it is not the case that’, filling in the pronouns for clarity.

c) Assign a capital letter to represent each independent statement.

d) Using only the capital letters from c) and the ampersand symbol (&), and the tilde (~), rewrite b).

Example Problem:
Both Seth and Trevor went to college.
Example Answer:
Seth went to college, and Trevor went to college.
Let S = “Seth went to college.”
Let T = “Trevor went to college.”
S & T.

Example Problem:
Regis did not remember to button his fly before walking on set.
Example Answer:
It is not the case that Regis remembered to button Regis’s fly before walking on set.
Let R = “Regis remembered to button Regis’s fly before walking on set.”
~R.

1. Amber did not have breakfast, but her sister did.
2. Tornados and hurricanes both involve strong winds.
3. Wolves are not invisible.
4. Octopi can escape through small openings, but they can’t spray ink.
5. Both birds and reptiles are non-furry.
6. Yellow paint was imprinted on the windows and sidewalk.
7. Undeterred by his enemies, Mark unleashed his anger.
8. Kerry and Rick didn’t both show up at the theater.
9. Tricia is under a lot of pressure from her boss, and one of her coworkers.
10. Ellen is interested, yet uninterested.