Logic HW

For each of these arguments, put them into premise/conclusion form, and say: (1) if they're deductive or inductive, and (2) if they're valid/invalid OR cogent/uncogent.

Argument 1: If the rapture has occurred, then either some of the cars on the highway will be unoccupied or all drivers are damned. Some drivers are not damned. None of the cars on the highway are unoccupied. Therefore, the rapture has not occurred.

Argument 2: The butler must have done it, because either the butler or the colonel did it. But if the colonel was out drinking last night, then he wasn't at home. And we have really good reason to think that he was out drinking last night.

Argument 3: Excerpt from *Relativity*, by Einstein

I stand at the window of a railway carriage which is travelling uniformly, and drop a stone on the embankment, without throwing it. Then, disregarding the influence of the air resistance, I see the stone descend in a straight line. A pedestrian who observes the misdeed from the footpath notices that the stone falls to earth in a parabolic curve. I now ask: Do the "positions" traversed by the stone lie "in reality" on a straight line or on a parabola? Moreover, what is meant here by motion "in space"? From the considerations of the previous section the answer is self-evident. In the first place, we entirely shun the vague word "space," of which, we must honestly acknowledge, we cannot form the slightest conception, and we replace it by "motion relative to a practically rigid body of reference." The positions relative to the body of reference (railway carriage or embankment) have already been defined in detail in the preceding section. If instead of "body of reference" we insert "system of co-ordinates," which is a useful idea for mathematical description, we are in a position to say: The stone traverses a straight line relative to a system of co-ordinates rigidly attached to the carriage, but relative to a system of co-ordinates rigidly attached to the ground (embankment) it describes a parabola. With the aid of this example it is clearly seen that there is no such thing as an independently existing trajectory (lit. "path-curve"), but only a trajectory relative to a particular body of reference.

(HINT: The conclusion is "There is no such thing as an independently existing trajectory.")