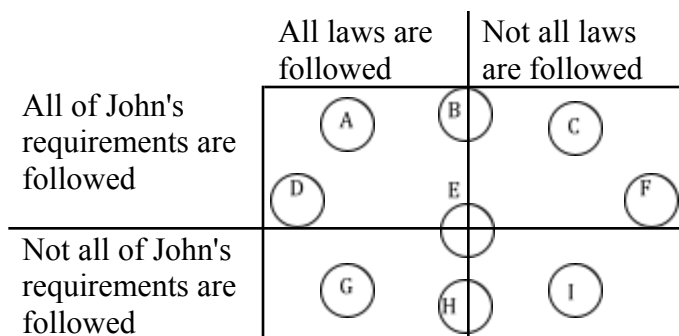


1. For each of the modal statements below, is the underlined modal is being used as a deontic modal, an epistemic modal, a teleological modal, or an ability modal? In each case, give a justification for your answer.
 - a. I just heard a knock at the door. That might be Bill. As far as I know he's still around.
 - b. All passengers on this flight may now unfasten their seatbelts and move around the cabin.
 - c. For two numbers x and y , if x is bigger than y , then y cannot be smaller than x .
 - d. We haven't had rain for a few days now. The rainy season may be over.
 - e. To get good grades, you might try studying.
 - f. If you worked out for a month, you could easily lift 40kg.

2. You are at an intersection. The law requires you to either go straight, turn left or turn right. There are no other laws. John insists that you go straight. He has no other requirements. Considering only the law and John's requirements, are the following sentences True, False, or either? In each case, justify your answer.
 - a. You can go straight.
 - b. You can turn right.
 - c. You may make a U-turn.

3. The situation in question 2 can be illustrated with the diagram below, where the largest box represents the set of all possible worlds.



- a. Which circles in the diagram could represent a set of worlds in all of which you go straight?
- b. Which circles in the diagram could represent a set of worlds in all of which you turn right?

4. Suppose there is an additional law that seat belts must be worn.
- Which circles in the diagram in question 3 could represent a set of worlds in all of which you go straight?
 - Which circles in the diagram in question 3 could represent a set of worlds in all of which you turn right?
5. What are the following? Assume that subscripts identify modal flavors as follows: e = epistemic, d = deontic, t = teleological, a = ability.
Use: E for \exists
A for \forall
L for λ
/= for \neq
i for \uparrow
w_@ for w_@
- ||John can_a swim||
 - ||Mary may_d leave|| (Speaker's permission)
 - ||Bill might_e win|| (Speaker's knowledge)
 - ||To arrive first, you could_t run||