

### 5.9.1. Translation Problems: Universal and Existential Sentences

Translate each of the following into the formal language of Chapter Five.

1a. Not all clients are in the conference room.

(**G**: is a client; **H**: is in the conference room)

1b. No clients are in the conference room.

(**G**: is a client; **H**: is in the conference room)

2. All dogs that play the banjo have a future in show business.

3. If William James is a philosopher, then not all philosophers are Greek.

(**A**: William James; **G**: is a philosopher; **H**: is Greek)

4. Either every cat has nine lives, or some old wives are mistaken.

5. If all guns are outlawed, then only outlaws have guns.

(**G**: is a gun; **H**: is outlawed; **I**: is an outlaw; **J**: has guns)

6. If only philosophy majors have a large vocabulary, then some dishwashers have a large vocabulary.

(**G**: is a philosophy major; **H**: has a large vocabulary; **I**: is a dishwasher)

7a. If all men are mortal and only men are club members, then all club members are mortal.

(**G**: is a man; **H**: is mortal; **I**: is a club member)

7b. If all men are mortal and there are no non-male club members, then only mortals are club members.

(**G**: is a man; **H**: is mortal; **I**: is a club member)

8a. A man who acts as his own lawyer has a fool for a client.

(**G**: is a man; **H**: acts as his own lawyer; **J**: has a fool for a client)

8b. A man who acts as his own lawyer was on TV last night.

(**G**: is a man; **H**: acts as his own lawyer; **J**: was on TV last night)

9. Unless either some men are immortal or some women are, all humans are mortal.

(**G**: is a man; **H**: is mortal; **I**: is a woman; **J**: is a human)

10a. Whatever possesses mass exerts gravitational force.

(**G**: possesses mass; **H**: exerts gravitational force)

10b. Nothing possesses mass without exerting gravitational force.

(**G**: possesses mass; **H**: exerts gravitational force)

10c. Nothing possesses mass unless it exerts gravitational force.

(**G**: possesses mass; **H**: exerts gravitational force)

*(Tricky! Hint: does (10c) mean the same as (10a) and (10b)?)*

11. Nothing is eternal if it has parts.

(**G**: is eternal; **H**: has parts)

*(Tricky! Hint: use (10c) as a guide.)*