CSCE 580 Spring 2017
Quiz 3
Assigned Thursday, 17-01-19

Recall the (informal) definition of logical entailment:

A collection of sentences $S_1, S_2, ..., S_n$ logically entails another sentence S if the truth of S is implicit in the truth of the S_i sentences. (Therefore, and closer to the formal definition, the meaning of the terms in the S_i sentences do not matter in determining whether S is logically entailed by $S_1, S_2, ..., S_n$.)

Consider the following knowledge base (KB), written as a Prolog program.

```
dog(X) :- poodle(X).
dog(X) :- collie(X).
poodle(X) :- poodle(X).
collie(fido).
```

Recall that Prolog uses back-chaining in answering queries.

1. The KB above logically entails `dog(fido)`. True or false? **Answer:** True.

2. The query dog(fido) will not succeed. True or false? **Answer:** True.

3. Back-chaining is complete on Prolog KBs. True or false? **Answer:** False.