Duration: 15 minutes
Aids allowed: None

Family Name: _________________________  Lecturer: Diane Horton
First Name: __________________________
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Tutorial: Circle one.

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Grade: ______________
1. What do you type in order to ask Prolog for another solution to your query?

2. Suppose I had this small database of Prolog facts:

    happy(fred).
    talented(barney).
    beautiful(betty).
    talented(betty).
    bossy(wilma).

(a) Write a query that asks Prolog to find someone who is both talented and beautiful. For this question, correct syntax counts.

(b) What would be Prolog’s response to each of these queries? Write the answers beside the queries. I don’t care about the exact format of Prolog’s answer, just the content.

   l ?- happy(barney).

   l ?- happy(Barney).

   l ?- happy(x).

3. Here is a valid Prolog rule:

    popular(X) :- friends(X, Y).

Which of the following is the best paraphrase of this rule? Circle one.

(a) X is popular if X is friends with someone.
(b) X is popular if X is friends with everyone.
(c) X is friends with everyone if X is popular.
(d) X is friends with someone if X is popular.
(e) Everyone is popular.

4. Assume that a, b, c, and d are Prolog predicates. Translate this logical statement:

   \((a \land b \land c) \lor d \supset c\)

into one or more valid Prolog clauses that express the same thing. For this question, correct syntax counts.