PRACTICE QUIZ 3: PREDICATE LOGIC (Un-nested Quantifiers)

MA 240, Instructor: Jeffrey Horn, Fall 2016 **NAME:**

Match the natural language sentences to their logically equivalnt predicate logic expressions below. Next to each sentence write down the NUMBER of the predicate logic expression that you think best matches the sentence. The matching is one-to-one. Let the domain of discourse be the set of all living people. Let "CanFool(x,y)" mean " x can fool y." Assume "I", and "ME" refer to a unique individual, and that "YOU" also refers to a single individual (different from "I"/"ME").

1 NATURAL LANGUAGE

_____ A. No one can fool themselves.

_____ B. There is at least one person who can fool you.

_____ C. I can fool myself.

_____ D. I can fool anyone!

_____ E. You can't fool me!

_____ F. There is someone I can fool.

_____ G. No one can fool me.

_____ H. You can't fool anybody!

_____ I. Everyone can fool me.

_____ J. There must be someone you can fool.!

2 PREDICATE LOGIC

1. $\overline{CanFool(YOU, ME)}$
2. $\forall x(CanFool(x, ME))$
3. $\forall x(\overline{CanFool(x, x)})$
4. $\exists x(CanFool(YOU, x))$
5. $\exists y(CanFool(I, y))$
6. $\forall x(CanFool(I, x))$
7. $\forall x(\overline{CanFool(x, ME)})$
8. $\exists y(CanFool(y, YOU))$
9. $CanFool(I, ME)$
10. $\overline{\exists x(CanFool(YOU, x))}$