Name:

ID#:

Section:   455   or   555

| 2 | 2 | 2 | 2 | 2 | 10 |
|---|---|---|---|---|----|

**Directions** – *The quiz is closed book/notes. You have 10 minutes to complete it; use this paper only.*

**All problems are worth 2 points. Answer in one sentence only.**

1. What is one real-world application that last week's guest lecturer's pattern recognition technology has enabled or can enable?

2. Given the general linear discriminant function $g(x) = w^T \phi(\mathbf{x}) + w_0$, with weight vector $w$, bias term $w_0$ and input features $\mathbf{x}$, what is the purpose of the $\phi$ function?

3. What is an ROC curve?

4. Why is it problematic for a classifier to have a high bias? (Note that I am not referring to bias *parameters* as in problem 1.)

5. How are individual trees in a random forest different from traditional decision trees?