Discussion Questions for "Generics"

1. Java already has a Universal Class, "Object", which is a super-class of every object. Why do we need generics, when we can just use Object x as an argument, and then downcast to a more specific class when we need to? Are there advantages to generics? Disadvantages?

2. Discuss the advantages and disadvantages of the C++ template generic methodology vs. the Java generic type checking methodology. Did the Java developers make the right choice?

3. Generics provide the biggest advantage for system library developers. For instance, the Collections Infrastructure (which we will discuss in more detail in lectures 36 and 37) would be nearly impossible without a good set of generics. Why is it useful for us lowly Java developers to understand something about generics as well as the library developers?

4. Can you describe some program applications where you might want to use a generic method? What about a generic class? When would generics be useful?