1. **Using automatic properties is a shortcut that avoids several explicit steps. List the steps that the use of automatic properties avoids.**

Automatic properties avoid the steps involved with get/set by assigning a value to, or retrieving a value from, a backing field without specifying the get, set.

1. **Using the object initializer syntax is a shortcut that avoids several explicit steps. List the steps that the use of object initializers avoids.**

Object initializers let you assign values to any accessible fields or properties of an object at creation time without having to invoke a constructor followed by lines of assignment statements.

1. **What is the purpose of creating extension methods?**

Extension methods enable you to "add" methods to existing types without creating a new derived type, recompiling, or otherwise modifying the original type.

1. **What is the one feature of extension methods that will always allow you to identify a method as an extension method?**

The one feature of extension methods that will always allow you to identify a method as an extension method is the "This" keyword.

1. **How do you create an extension method that filters the results returned by the method on a user-specified criterion?**

You create an extension method that filters the results returned by the method on a user-specified criterion by using the “yield” keyword.

1. **Explain the syntax of a lambda expression. The term “lambda expression” originates in the lambda calculus developed by the mathematician Alonzo Church in the 1930’s. There is a class of programming languages that are based on the fundamental ideas of lambda calculus.**

Specify input parameters (if any) on the left side of the lambda operator and an expression or a statement block on the other side.

1. **This will require some outside research. What is the distinction between an anonymously typed variable and a dynamically typed variable?**

Anonymously typed variables use the “var” keyword and provide a convenient way to encapsulate a set of read-only properties into a single object without having to explicitly define a type first. The type is a static type, but an object of type dynamic bypasses static type checking. Dynamically typed variables are assigned at run-time, “var” declarations are resolved at compile-time.

1. **You are having a discussion about C# with a friend of yours that uses another language. You are telling him about C#’s LINQ library. How would you describe to him the difference between LINQ’s SQL-like notation and LINQ’s dot notation?**

The SQL notation is similar to an SQL query and dot is using lambda syntax.

1. **What, exactly, does the await keyword do?**

The “await” keyword is applied to a task in an asynchronous method to insert a suspension point in the execution of the method until the awaited task completes. Applying the await keyword means I can treat the result from a method as though it were a regular method and just assign the return to a variable.

1. **What is the connection between await and the async keywords?**

In order to use the await keyword, you must use the async keyword in the method signature. The async method usually contains one or more await expressions.