CPSC Assignment #4

Part a) Create a Product class with the following fields:

- ProductId (int)
- ProductName (string)
- Price (double)
- Category (enum – see below for details)
- UnitsInStock (int)
- OnSale (bool)

Category is an enumeration that can be one of the following choices:

- Sports (CategoryId=100)
- Electronics (CategoryId=200)
- Books (CategoryId=300)

In C#, you will declare the enumeration as:

```csharp
enum CategoryId : int
{
    Sports=100,
    Electronics=200,
    Books=300
}
```

Implement ICloneable, IComparable and IComparer interfaces for the Product class. Then test the IComparer interface by creating an ArrayList of products and displaying these in a datagridview. Implement the ColumnHeaderClick event on the datagridview to provide ascending and descending sorting on any column.

Add a second form to the project that will allow a user to add a new product. You should be able to edit or delete any product through the datagridview.

Part b) Revise part a) to include generic versions of IComparable and IComparer interfaces. Use List<Product> instead of ArrayList.