Basic Inheritance — Study Questions

- What is the difference between overloading and overriding a function?

- Can you override a function that is not a member function of a class?

- Write an example of a function with default arguments.

- When might it be ok to use friend functions?

- Write the interface of a simple class `Polygon` with two integer private members `height_` and `width_` a parameterized constructor that takes two parameters height and width, and three public members: `int getHeight(); int getWidth;` and `double area();`

- Write the interface and implementation of two classes Triangle and Rectangle that inherit from `Polygon`. Thus `Polygon` is the base class and `Triangle` and `Rectangle` are two derived classes. Write the implementation for both the derived classes. Remember, the constructor is not inherited. You must override `area()` which is computed differently in each class. What about `getWidth()` and `getHeight()` ?

- When would you declare class members as protected?

- What is the call order for Constructors with inheritance? For Destructors?

- When should a base class Constructor be called explicitly. Give a C++ example of how you would do that.