

Student No and Name:	Score:
-----------------------------	---------------

- 1) [15 points] Edit this code so the class GoldenRetriever is a **subclass** of the Dog class. When you run the code it should print “woof!” and then “arf arf”

```
public class Dog
{
    public void speak()
    {
        System.out.println("woof!");
    }

    public static void main(String[] args)
    {
        Dog a = new Dog();
        a.speak();
        Dog b = new GoldenRetriever();
        b.speak();
    }
}

public class GoldenRetriever
{

}
```

- 2) [15 points] Add an equals method to this class that returns true if the current Dog and passed Dog have the same name. The test code should print false twice then true twice.

```
public class Dog
{
    private String name;

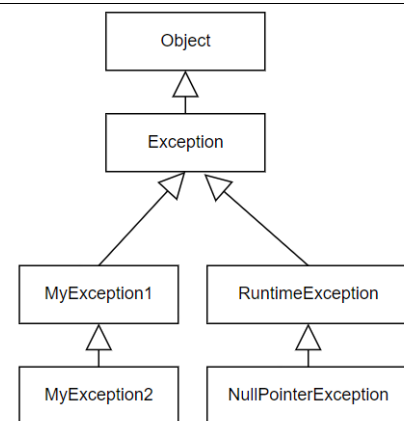
    public Dog(String name)
    {
        this.name = name;
    }

    public boolean equals(Object other)
    {
        // ADD CODE HERE
    }

    public static void main(String[] args)
    {
        Dog d1 = new Dog("Rufus");
        Dog d2 = new Dog("Sally");
        Dog d3 = new Dog("Rufus");
        Dog d4 = d3;
        System.out.println(d1.equals(d2));
        System.out.println(d2.equals(d3));
        System.out.println(d1.equals(d3));
        System.out.println(d3.equals(d4));
    }
}
```

For question 3 and 4 refer to following Exception hierarchy diagram and test code:

```
try {
    myMethod();
} catch (MyException1 e) {
    System.out.println("A");
} catch (Exception e) {
    System.out.println("B");
} finally {
    System.out.println("C");
}
```



- 3) [10 points] If myMethod throws MyException2, what will be printed on the console?

a) A	b) A	c) B	d) B	e) C
B	C	C		

- 4) [10 points] If myMethod throws NullPointerException, what will be printed on the console?

a) A	b) A	c) B	d) B	e) C
B	C	C		

5) [20 points] What will be printed on the screen when the following code block is run?

```
List<String> list = new ArrayList<String>();
list.add("A");
list.add("X");
list.add("D");
list.add("B");
list.add(1, "K");
list.remove(0);
list.set(2, "L");
for (String a : list) {
    System.out.print(a+ " ");
}
```

a) KXLB	b) KDL	c) AKLXDB	d) AXKDB	e) KXDLB
---------	--------	-----------	----------	----------

6) [10 points] A movie theater has multiple showings of a movie each day. Each movie showing has a start time and location (theater number). What should the relationship be between the Movie class and the MovieShowing class?

- A. The MovieShowing class should be a subclass of the Movie class.
- B. The Movie class should be a subclass of the MovieShowing class.
- C. A MovieShowing has a movie associated with it, so it should have a Movie field.

7) [10 points] A bookstore is working on an on-line ordering system. For each type of published material (books and movies) they need to track the id, title, author(s), date published, and price. Which of the following would be the best design?

- A. Create one class PublishedMaterial with the requested fields plus type
- B. Create classes Book and Movie and each class has the requested fields
- C. Create the class PublishedMaterial and have Book and Movie inherit from it all the listed fields
- D. Create one class BookStore with the requested fields plus type
- E. Create classes for PublishedMaterial, Books, Movies, Title, Price, ID, Authors, DatePublished

8) [10 points] Fill in the blanks with "Abstract class" or "Interface".

- can have abstract and non-abstract methods.
- supports multiple inheritance.
- class can provide the implementation of interface.
- An can be extended using keyword "extends".
- An can be implemented using keyword "implements".