Quiz 1

1.

What is the output of the code below?

```
public class Employee {
    private String name;
    private float  salary;

    public Employee(String name, float salary) {
        this.name = name;
        this.salary = salary;
    }

    public Employee changeName (Employee e, String name) {
        e.name = name;
        return e;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getName() {
        return name;
    }

    public static void main(String[] args) {
           Employee e = new Employee("bob", 30000);
           e.name = "Fred";
           e = e.changeName(e, "Bob");
           System.out.println(e.getName());

           Calendar hireDate = null;
           e = new Director("sam",10,hireDate);
           Manager m = new Director("sussan",10,hireDate);
           Admin a = new Admin("ad",10);
       }
}
```

○	Fred
◉	Bob
○	null
○	empty string

2.

Suppose the following two classes are defined:

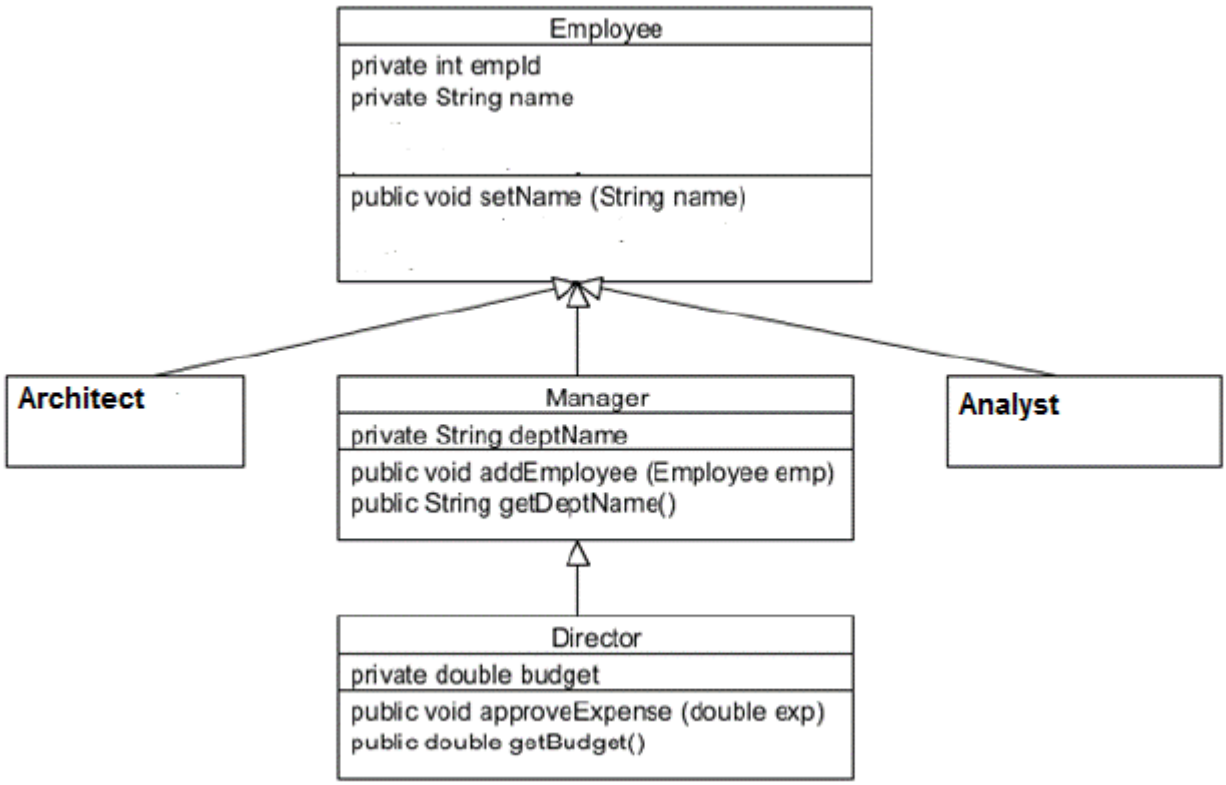
```
public abstract class Figure {...}
public class Rectangle extends Figure {...}
public abstract class 3DFigure extends Figure {...}
```

Which of the following instantiations is *not* valid?

○	Rectangle r = new Rectangle(…..);
○	Figure f = new Rectangle(….);
◉	Figure f = new 3DFigure(…);

3.

Using the class diagram below, examine the code that follows and choose which of the following statements below does *not* compile?




```
Employee e = new Director();
Analyst a = new Analyst();
Manager m = new Director();
```

◉	e.addEmployee()
○	m.addEmployee(a);
○	((Director)m).approveExpense(10000)

4.

The code below produces a compilation error. Examine the code and choose the fix that will enable the classes to compile

```
public class Account {
    private double balance;
    public Account (double balance) { this.balance = balance; }
    // other getter and setter for balance
}
public class Savings extends Account {
    private double interestRate;
    public Savings(double rate) {
        this.interestRate = rate;
    }
}
```

○	Call the setBalance method of the Account from Savings
○	Change the access of interestRate to public
○	Add a no-arg constructor to class Savings
◉	Replace the constructor in Savings with one that calls the constructor of Account using super.

5.

Which of the following statements is *untrue* about an "immutable" class ?

○	All attributes must be private to prevent access from outside the class
○	Have a constructor that enables an object to be instantiated the first time with values
◉	An object instance cannot be changed after it is created
○	Provide only setter and getter methods to access the attributes from outside the class

6.

An abstract method must *not* have:

◉	a method implementation
○	a return value
○	method parameters
○	a protected access modifier

7.

Which of the following is *untrue* about interfaces and inheritance?

○	A class can extend multiple interfaces
◉	An interface can extend multiple interfaces
○	A class can extend another class and implement multiple interfaces
○	All methods in an interface are implicitly abstract, unless provided with a default implementation

8.

Which of the following statements is *untrue* about method overriding?

○	Constructors cannot be overridden
○	If a static method in the base class, is redefined in the sub-class, the later hides the method in the base class
○	In method overriding, run-time polymorphism ensures that instantiated, the call to any method in the base class will be resolved to the correct method, based on the run-time type of the object instantiated.
◉	During method overriding, the overridden method in the sub-class can specify a weaker access modifier

9.

Choose the *incorrect* statement

○	The principle of least knowledge reduces dependencies between objects and promotes loose coupling

○	The code below is a good example of the principle of least knowledge
	`Driver driver = car.getDriver()`
	`Address driverAddress = driver.getAddress()`

◉	According to the principle of least knowledge, accessing the methods on objects returned by a method call is invalid
○	The principle of least knowledge states that accessing methods of objects passed in as parameters or instantiated inside the method is valid

✔ Submit