Quiz 1

1.
What is the output of the code below?

```java
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:

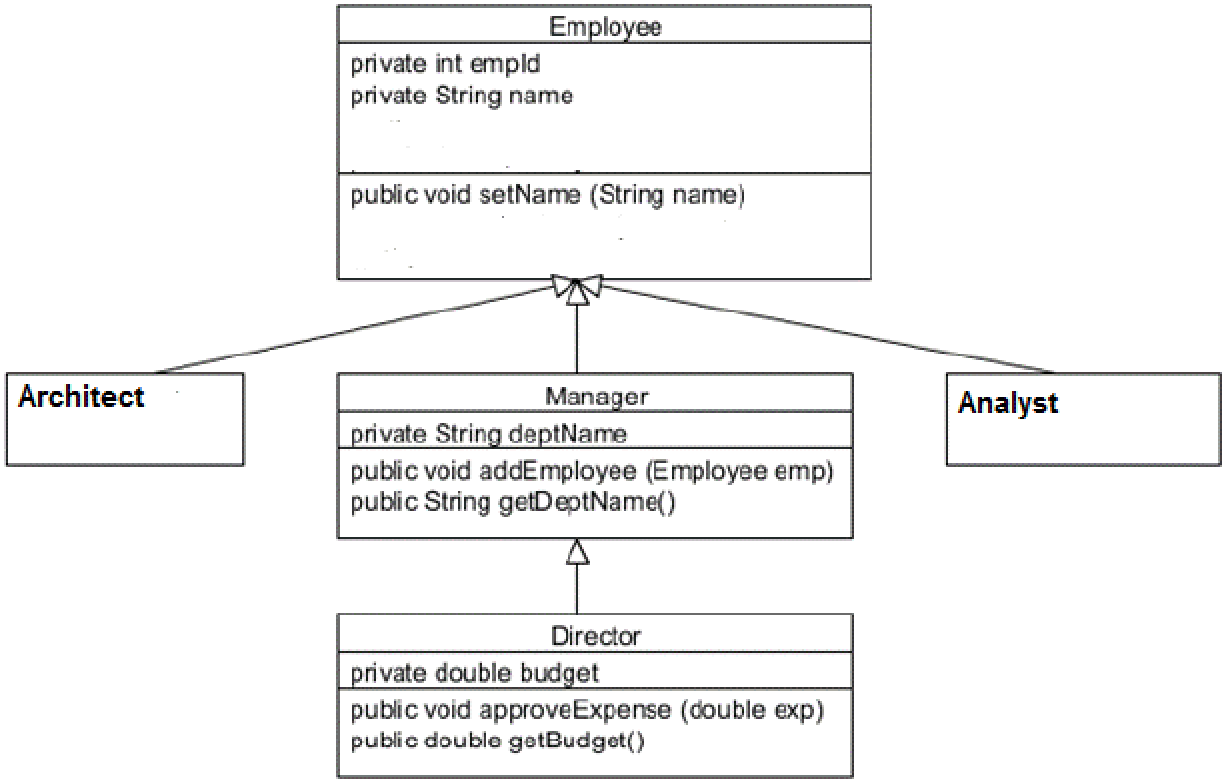
```
public abstract class Figure {...}
public class Rectangle extends Figure {...}
public abstract class 3DFigure extends Figure {...}
```

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
private int empId
private String name
public void setName (String name)
Architect
Manager
private String deptName
public void addEmployee (Employee emp)
public String getDeptName()
Analyst
Director
private double budget
public void approveExpense (double exp)
public double getBudget()

```
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