AP Computer Science A
Ticket Out the Door
Set 23: Inheritance

Name _____ Period _____

Skill 23.2: Exercise 1

Declare a class called BankAccount. Then declare another class called SavingsAccount which inherits BankAccount.

Skill 23.3: Exercise 1

(a) Write the BankAccount constructor. The constructor should accept two parameters (A double which represents a balance, and a Sting which represents a name). The parameters should be assigned to private variables `balance` and `name`.

(b) Write the SavingsAccount constructor. The constructor should include the necessary parameters to invoke the BankAccount constructor. It should also accept a third parameter which represents the interest rate. The interest rate parameter should be assigned to the private variable interestRate;

```
private double balance;
private String name;
```

```
private double interestRate;
```

Skill 23.4: Exercise 1

The methods below exist in the BankAccount class. The addInterest method in the savings account class, calculates the interest earned, then deposits the interest in the bank account. Complete the addInterest method.

```
/* Returns the balance in the bank account */
public double getBalance(){
   return balance;
}

/* deposits money in the bank account */
public void deposit(double d) {
      deposit += d;
}
```

```
public void addInterest(){




}
```

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Skill 23.5: Exercise 1

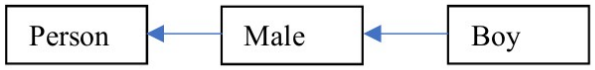
Consider the following classes and declarations. Indicate whether each declaration is legal or illegal

Class declarations	**Call in main method**	**Legal/ Illegal**

`class Bicycle{`
`//some code`
`}`
 	
`Class MountainBike extends Bicycle{`
`//some code`
`}`
 	
`Class DownhillBike extends MountainBike{`
`//some code`
`}`
 	
`Class CrossCountryBike extends MountainBike{`
`//some code`
`}`
	(a) `Bicycle myBike1 = new Bicycle();`
	
	(b) `Bicycle myBike2 = new DownhillBike();`
	
	(c) `MountainBike myBike3 = new DownhillBike();`
	
	(d) `MountainBike myBike4 = new Bicycle();`
	
	(e) `DownhillBike myBike5 = new CrossCountryBike();`
	
	(f) `CrossCountryBike() myBike6 = new MountainBike();`	

Skill 23.6: Exercise 1

Consider the hierarchy below,



Indicate whether each declaration is legal or illegal

Class declarations and methods	**Call in main method**	**Legal/ Illegal**

`class Person{`
`//some code`
`}`
 	
`Class Male extends Person{`
 	
`public void method1(Male m){`
`//do something`
`}`
`}`
 	
`Class Boy extends Male{`
`//some code`
`}`
	(a) `Person p = new Male( );`
	
	(b) `Person p = new Boy( );`
	
	(c) `Male m = new Boy( );`
	
	(d) `Boy b = new Male();`
	
	(e) `Boy b = new Boy( );`
	`method1(b);`
	
	(f) `Male m = new Boy( );`
	`method1(m);`
	
	(g)`Person p = new Male( );`
	`method1(p);`	

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