***AP Java Inheritance Worksheet***

Find the output of the following program and then answer the True/False questions at the bottom.

public void setup() {

Wolf Romulus = new Wolf();

Wolf Remus = new Wolf();

Dog ScoobyDoo = new Dog();

Chihuahua JLosDog =

new Chihuahua();

Cat Morris = new Cat();

Pet[] pets = new Pet[5];

pets[0] = Romulus;

pets[1] = Remus;

pets[2] = ScoobyDoo;

pets[3] = JLosDog;

pets[4] = Morris;

((Dog)pets[2]).setLicense(1111);

((Dog)pets[3]).setLicense(2222);

for (int nI = 0;

nI < pets.length; nI++) {

System.out.println(

pets[nI].getSize() + ", " +

pets[nI].speak());

}

}

class Wolf extends Pet {

private int myLegs;

public Wolf() {

myLegs = 4;

mySize = 150;

}

public int getLegs() {

return myLegs;

}

public String speak() {

return "Howl!";

}

}

***Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

class Dog extends Wolf {

private int myLicense;

public Dog() {

mySize = 50;

}

public String speak() {

return "Bark!";

}

public void setLicense(int nNumber) {

myLicense = nNumber;

}

public int getLicense() {

return myLicense;

}

}

class Chihuahua extends Dog {

public Chihuahua() {

mySize = 12;

}

public String speak() {

return "Yap!";

}

}

class Cat extends Pet {

public String speak() {

return "Meow";

}

public Cat() {

mySize = 10;

}

}

class Pet {

private int mySize;

public Pet(){mySize = 0;}

public String speak(){

return "Pet Sound";}

public int getSize(){return mySize;}

}

True/False Highlight the correct answer

True/False 1. Constructors are never inherited.

True/False 2. If you write a method in the derived (sub) class that has the same name, return type and arguments as a method in the base (super) class, you are "overriding" the method of the base (super) class.

True/False 3. **pets[3].getSize() == 0**

True/False 4. **System.out.println(Romulus.getLegs());** will cause an exception.

True/False 5. **System.out.println(pets[1].getLegs());** will cause an exception.

True/False 6. **System.out.println(ScoobyDoo.getLegs());** will cause an exception.

True/False 7. **System.out.println(JLosDog.getLegs());** will cause an exception.

True/False 8. **System.out.println(Morris.getLegs());** will cause an exception.

True/False 9. **System.out.println(JLosDog.getLicense());** will display "1111".

True/False 10. **System.out.println(Morris.setLicense(3333));** will cause an exception.

True/False 11. The **Dog** class overrides the **Wolf** class **getLegs()** method.

True/False 12. **Pet[] pets = new Pet[5];** will cause an exception.

True/False 13. **Dog pete = new Pet();** will cause an exception.

True/False 14 . **Pet pete = new Dog();** will cause an exception.

True/False 15 . The **Dog** class has 3 accessor methods (including inherited methods).

True/False 16 . The **Cat** class has 1 mutator methods (including inherited methods).

True/False 17 . Keeping a **Wolf** as a **Pet** is a good idea.

True/False 18 . **System.out.println(pets[nI].getSize() + ", " +pets[nI].speak());**is an example of *polymorphism***.**

True/False 19 . **Romulus instanceof Pet**

True/False 20 . **Morris instanceof Wolf**