

Polymorphism Worksheet -Inheritance + Overriden Methods

1. Use the following class definitions for this question.

```
public class Animal
{
    // code here
    public void greet(Animal a)
    {
        System.out.println("Snifffff");
    }
}
```

```
public class Dog extends Animal
{
    // code here
    public void greet(Animal a)
    {
        System.out.println("Grrrrrr");
    }
}
```

```
public class Cat extends Animal
{
    // code here
    public void greet(Dog c)
    {
        System.out.println("Purrrrrr");
    }

    public void greet(Animal c)
    {
        System.out.println("meow.");
    }
}
```

Given:

```
Cat fluffy = new Cat();
Animal spot = new Dog();
```

For each of the following lines of code, show what would be printed to the screen when run, or, if the code won't compile, write WC:

a. `fluffy.greet(spot);`

meow.

b. `spot.greet(fluffy);`

Grrrrrr

c. `fluffy.greet(fluffy);`

meow.

2. Use the following class definitions for this question.

```
public class Animal
{
    // code here
    public void greet(Animal a)
    {
        System.out.println("Snifffff");
    }
}

public class Mammal extends Animal
{
    // code here
}

public class Cat extends Mammal
{
    // code here
    public void greet(Animal a)
    {
        System.out.println("Grrrrrr");
    }
    public void greet(Cat c)
    {
        System.out.println("Purrrrrr");
    }
    public void greet(Mammal m)
    {
        System.out.println("hi there");
    }
}
```

Given:

```
Mammal rex = new Cat();
Cat fuzzy = new Cat();
```

a. What does `rex.greet(fuzzy)` print to the screen?

sniff

b. What does `fuzzy.greet(rex)` print to the screen?

hi there