



Java Inheritance and Polymorphism Puzzle Worksheet

Fill in the Blanks

1. Inheritance is implemented using the _____ keyword.
2. Polymorphism is achieved through method _____ and method _____.
3. A subclass is also known as a _____ class.
4. The _____ method in a subclass overrides the method in the superclass.
5. When a class extends another class, it inherits its _____ and _____.

Code Snippet Analysis

```
class Animal {
    void sound() {
        System.out.println("Animal makes a sound");
    }
}
class Dog extends Animal {
    void sound() {
        System.out.println("Dog barks");
    }
}
class Cat extends Animal {
    void sound() {
        System.out.println("Cat meows");
    }
}
public class Test {
    public static void main(String[] args) {
        Animal a;
        a = new Dog();
        a.sound(); // (1)
        a = new Cat();
        a.sound(); // (2)
    }
}
```

Questions:

1. What will be the output of the program at (1)?
2. What will be the output of the program at (2)?
3. What concept of Java does this code demonstrate?