

Inheritance — Handwritten FRQ

Name: _____ Period: _____ Date: _____

AP objective: MOD-3.B/3.C Points: 30

Why handwritten, in class: this replaces a typed task AI can complete. Work every item by hand and **show all your steps** — no AI, phones, or notes. A correct answer with no work earns half credit; the work is what proves it's yours.

Complete each item by hand — show all work

1. Given the Animal superclass below, write a Dog subclass (extends, super in constructor, override speak) — 16 pts

GIVEN

```
public class Animal {
    private String name;
    public Animal(String name) { this.name = name; }
    public String speak() { return "..."; }
}
// Dog's speak() should return "Woof"
```

super(...) must be the first line. Reproduce the whole subclass by hand.

2. Trace this code: what does ref.speak() return, and why? — 8 pts

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```
Animal ref = new Dog("Rex");
System.out.println(ref.speak());
```

3. Explain declared type vs. actual type in your own words — 6 pts

Oral defense (teacher — 60 sec)

Student answers one cold question aloud before grading. A student who did their own work can answer instantly; a copied one can't. Strong OK Weak

Scoring (30 pts)

Criterion	Pts	Earned
Subclass w/ super & override	16	
Polymorphism trace	8	
Declared vs actual explained	6	
<i>Gate</i> : passed oral defense (can explain the work aloud)	req'd	<input type="radio"/> Y <input type="radio"/> N
Total	30	

Integrity gate: if the student can't explain their work aloud, cap the score at 50% and require a resubmit.