

## Quiz W3 – CS 102

Name: \_\_\_\_\_, ID: \_\_\_\_\_

Consider the following code:

```
class Worker {
    protected float baseWork;
    public Worker(float baseWork) {
        this.baseWork = baseWork;
    }
    public float getWork() {
        return getBaseWork();
    }
    public final float getBaseWork() {
        return baseWork;
    }
    public float getExtraWork() {
        return getWork() - getBaseWork();
    }
}
class HardWorker extends Worker {
    private float multiplier;
    public HardWorker(float baseWork, float multiplier) {
        super(baseWork);
        this.multiplier = multiplier;
    }
    public float getWork() {
        return multiplier*super.getWork();
    }
}
class TripleWorkerWithOvertime extends HardWorker {
    private float overtime;
    public TripleWorkerWithOvertime(float baseWork, float overtime) {
        super(baseWork, 3.0f);
        this.overtime = overtime;
    }
    public float getWork() {
        return super.getWork() + overtime;
    }
}
public class Test {
    public static void main(String[] args) {
        Worker w = new HardWorker(20, 4.0f);
        float diff = w.getExtraWork();
        System.out.println(diff);
        w = new TripleWorkerWithOvertime(30, 10);
        diff = w.getExtraWork();
        System.out.println(diff);
    }
}
```

a) Print the output from the program.

b) Implement TripleWorkerWithOvertime using has-a relationship.

```
class TripleWorkerWithOvertime {
    private float overtime;
    private HardWorker hworker;
```

```
}
```