

1.

See the FinalExam.java in folder Q1

2.

- a) list, type, func3(), func4(), something().
- b) age, list, type, flag, func2(), func3(), func4(), something()
- c) type, flag, func3()
- d) age, list, type, flag, func1(), func2(), func3(), something() [Same as b]
- e) type, flag, func2(), func3()
- f)


```
Object o1 = new Exam(3);
Exam ex1 = new Exam2();
Exam.func3();
Exam2.func3();
Exam.func2();
ex1.func3();
ex1.func1();
Exam.func1();
Exam2.type = "an exam";
Exam2.flag = false;
ex1.list = new ArrayList();
System.out.println(ex1.age);
```
- g) No. ArrayList needs to be imported.

3.

```
yellow timesParent: 5, count: 3
yellow timesParent: 4, count: 4
blue timesParent: 2, count: 3
timesChild: 2
blue timesParent: 2, count: 4
blue timesParent: 2, count: 5
yellow 6
blue 6 1
pink 6 1
```

4.

```
public static String collect(ArrayList<String> list, int ctr){
    if(ctr >= list.size()){
        return "";
    } else {
        if(list.get(ctr).matches("[\\w]{2, 7}[\\s]{2,}[\\d]+\\.([Qq|q+])")){
            return list.get(0) + collect(list, ++ctr);
        } else {
            return collect(list, ++ctr);
        }
    }
}
```