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(ctr) + collect(list, ++ctr);
        } else {
            return collect(list, ++ctr);
        }
    }
}
```