Additional Exercise

In this problem, you are asked to implement a class to conduct search in a recursive fashion, to solve small pluzzles of the form; recall from the quiz page of a newspaper the problem of assigning digits 0-9 to variables x, y, z in the puzzle such that

$$
\begin{aligned}
xxy + xxx &= yyz \\
yzx - y &= yzz \\
xx * xy &= xzy
\end{aligned}
$$

A solution is x = 1, y = 2, and z = 3. Your job is it to implement the search procedure, that finds the instantiations of x, y, and z. To make things easier (!), once you find a suitable assignment of x, y, z, you are asked to throw an exception, that contains the solution to the puzzle. To get you started, here's an implementation of the class Result.

```
class Result extends Exception { int x; int y; int z;

    Result (int i, int j, int k) {
        x = i;
        y = j;
        z = k;
    }
}
```

Please implement the search procedure for that particular problem. Your solution should try each possible instantiation in turn and throws a Result, once the first solution is found.

```
interface Problem {
    public void test () throws Result;
}
```

This means if you run your test method, you should be able to catch the result of the search by, assuming that p is an instance of the class you implemented.

```
try {
    p.test ();
}
catch (Result e) {
    System.out.print(e.x);
    System.out.print(e.y);
    System.out.print(e.z);
    System.out.println("");
}
```

If your code does not throw an exception, that means that no solution was found. Why?