# Ecuacion2Grao.java

```java
public class Ecuacion2Grao {
        int a;
        int b;
        int c;
        int nsols=-1;

        public Ecuacion2Grao(int a,int b,int c) {
                this.a=a;
                this.b=b;
                this.c=c;
        }

        double[] soluciona() throws Ec2GraoException {
                double[] s=new double[2];
                int radix=b*b-4*a*c;
                if (radix < 0) throw new Ec2GraoException();
                if (a==0) {
                        if (b==0) throw new Ec2GraoException();
                        s[0]=-((double)c)/b;
                        s[1]=0;
                        nsols=1;
                } else {
                        s[0]=(-b+Math.sqrt(radix))/2*a;
                        s[1]=(-b-Math.sqrt(radix))/2*a;
                        nsols=2;
                }
                return s;
        }

        int getNSols() throws Ec2GraoException {
                if (nsols<0) throw new Ec2GraoException();
                return nsols;
        }
}
```

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```java
import org.junit.Test;
import static org.junit.Assert.*;
import org.junit.runner.JUnitCore;
import org.junit.runner.Result;
import org.junit.runner.notification.Failure;

public class Ecuacion2GraoTest {

        @Test( expected = Ec2GraoException.class )
        public void shouldLaunchEcuacion2GraoException() throws Ec2GraoException {
                Ecuacion2Grao ec=new Ecuacion2Grao(7,5,6);
                ec.soluciona();
        }

        @Test( expected = Ec2GraoException.class )
        public void shouldLaunchDivideByZeroException() throws Ec2GraoException {
                Ecuacion2Grao ec=new Ecuacion2Grao(0,0,8);
                ec.soluciona();
        }

        @Test
        public void testTwoSolutions() throws Ec2GraoException {
                Ecuacion2Grao ec=new Ecuacion2Grao(2,7,3);
                double[] s=ec.soluciona();
                assertEquals("S1 Must be ",15.33,s[0],0.0005);
                assertEquals("S2 Must be ",-8.12,s[1],0.0005);
        }

        @Test
        public void testOneSolution() throws Ec2GraoException {
                Ecuacion2Grao ec=new Ecuacion2Grao(0,2,3);
                double[] s=ec.soluciona();
                assertEquals("Must be -3/2",((double)-3)/2,s[0],0.0005);
        }


        public static void main(String[] args) {
                Result result = JUnitCore.runClasses(Ecuacion2GraoTest.class);
                System.out.println("Realizados "+result.getRunCount()+" tests en
"+result.getRunTime()+"ms");
                for (Failure failure : result.getFailures()) {
                        System.out.println(failure.toString());
                }
        }
}
```