Problem: Quadratic Roots Revisited (25)

Rewrite your quadratic roots program to first check for imaginary roots by evaluating b*b-4*a*c and providing appropriate feedback if necessary. Also, make sure that a is non-zero and state explicitly how many roots there are before listing the roots. Sample invocations of your program could look like:

```
Enter the value for a : 1
Enter the value for b : 0
Enter the value for c : -1
There are 2 distinct real roots.
The first root of (1)*x*x + (-1) is : 1
The second root of (1)*x*x + (-1) is : -1

Enter the value for a : 0
Enter the value for b : 0
Enter the value for c : -1
This is not a quadratic polynomial.

Enter the value for a : 1
Enter the value for b : 2
Enter the value for c : 1
There is only 1 distinct real root.
The root of (1)*x*x + (2)*x + (1)  is : 1

Enter the value for a : 1
Enter the value for b : 1
Enter the value for c : 1
There are no real roots.
```

Problem: Courses (25)

Write a program Courses.java that decodes a UCT course code. For purposes of this exercise, we will only use course codes starting with CSC, MAM, PHY and STA. They are abbreviations for "Computer Science", "Maths and Applied Maths", "Physics" and "Statistics" respectively. We will only use the suffixes F, S, W and H - where "F" stands for a first-semester half-course, "S" for a second-semester half-course, "W" for a whole-course taught over the whole year, and "H" for a half-course taught over the whole year. Of the three-digit section, the first digit specifies the year - where "1","2","3" are for first, second and third-year courses, "4" is an honours year course, "5" is for masters students, and "6" is for PhD students.

The program should process a single code and exit. Print error messages for invalid course codes. It is good style (read "worth marks") to use switch statements where appropriate. Following are some sample invocations of a typical solution to this problem.

```
Enter department part of the code: CSC
Enter the course part of the code: 115
Enter the semester part of the code: F
```

CSC115F is a first year course in computer science,
taught as a full time course during the first semester.

Enter department part of the code: MAM
Enter the course part of the code: 201
Enter the semester part of the code: H

MAM201H is a second year course in maths and applied maths,
taught as a half course over the course of the while year.

Problem: Newspaper (25)

(leave as is)