

## Part 1

Write a Java program to accomplish each of the following tasks:

1. Prompt the user for a decimal point number.
2. Assign the number to a suitable variable.
3. The output of program should match the following.....

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```
Please enter a decimal point number in the format xx.xxxx eg 12.3456
12.3456
Number rounded (two decimal places)      : 12.35
Number squared (three decimal places)    : 152.414
Number cubed to (three decimal places)   : 1881.640
Square root (four decimal places)        : 3.5136
```

**Note :** You will need to perform several maths operations to produce the required output. But there are in built Java functions that would allow you to do some of these (*Hint java.lang.Math*)

Also always try to write efficient code... do you need to create a new variable to store the result of each operation before outputting to screen?

## Part 2 – IF.. ELSE Statements (Masters grading)

Write a Java program to accomplish each of the following tasks:

1. Prompt the user of the program for a final mark for a Masters student (between 0 – 100).
2. Assign the number entered to a suitable variable.
3. Using only IF .. ELSE statements output the Masters Classification corresponding to number entered by the user.

0-49	Fail
50-59	Pass
60-69	Merit
70-100	Distinction

**Note :** if the user enters a number outside the range output a suitable error message

4. Test your program.

**Output examples**

```
Enter mark ...  
51  
Classification : pass
```

```
Enter mark ...  
70  
Classification : distinction
```

## Part 3– More Selection statements

1. Prompt the user for his/her age. Then check if the user is over 17. If so then prompt the user for a name. Then output the user's inputted name and age. Otherwise if not over 17 then output "too young to continue" (i.e. do not prompt for name). In addition ensure that the user does not enter a negative number or 0 for age. (if so exit the program gracefully with "sorry don't recognise your input").
2. Use an if ... else statement: to check a user input value into a voting system. The user should be presented with two options 'con' and 'lab'. (Representing Conservative and Labour. If the entry is con then output "Voting registered for Conservative" and "Voting registered for Labour" upon 'lab' entry. Ignore the case that the user enters these values in.

(Your program should use the conditional operator to help convert the input value (con or lab) to Labour or Conservative respectively.

```
Voting...
Enter 'con' for Conservative and 'lab' for Labour
CoN
Voted registered for Conservative
```

Also add some validation to ensure the user cannot register a vote if they type any other entry(see below)

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```
Voting...
Enter 'con' for Conservative and 'lab' for Labour
labbb
Sorry voting party unrecognised
```