Fundamentals of Programming 1 5%
Exercise sheet 2

Question 1

Write a Java program that prints the **quotient** and **remainder** on dividing the constant **X** by the constant **Y**. The constant X should be initialised to **5** and the constant Y should be initialised to **3**. Your program should use two variables called **quotient** and **remainder** to store results and you should use a single *System.out.println* statement to print the result in the format:

```
X / Y = 1 and X % Y = 2
```

NOTE: this question **does not** require user input

Name your program **Question1.java**

Question 2

Write a Java program to calculate an employee's *gross weekly pay*. The **input** to the program should be the ***number of hours worked*** and the ***hourly rate of pay***. Your program output should look as follows and you should **test your program using the values shown in the screenshot below**:

```
Please input hourly rate: 9.6
Please input hours worked: 45
Hours worked = 45.0 hourly rate = 9.6 gross weekly = 432.0
```

Name your program **Question2.java**

Question 3

Write a program that **prompts** the user for ***four integer values*** (use four separate variables) and prints their ***average***. Your program output should look as follows and you should use the test values shown in the screenshot.

```
Enter number 1: 1
Enter number 2: 2
Enter number 3: 3
Enter number 4: 4
Answer = 2.5
```

Name your program **Question3.java**

Question 4

Write a Java program that calculates the volume of a cylinder. Your program should **prompt** the user to enter the **radius** and **height** of the cylinder and should use a combination of **constants** and **variables** to calculate the volume. The following formula should be used to calculate the volume, *where V=volume, r=radius and h=height*:

$$V = \pi r^2 h$$

NOTE: You should test your program using the inputs shown in the screenshot below:

```
Enter radius: 2.5
Enter height: 11.5
Volume = 225.6875
```

Name your program **Question4.java**

Deliverables

Place all your .java files in a folder called **Week2**. Zip the Week2 folder and upload the zip file using the Week2 upload link for your group on MOODLE. All work must be completed and demonstrated in your practical session.

Plagiarism

This assessment should be an individual piece of work. Any evidence of plagiarism will result in a grade of zero for all parties involved and will trigger the Universities plagiarism policy 3AS08 (see course coordination page).