Programming Exercises - SDJ - Session 01

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Exercise 1.05 In Denmark, the sales tax is 25%. Write a program that calculates and prints the tax and the total price of items that before the added tax cost 80, 140, and 230 kr., respectively.

Exercise 1.06 Write a program that calculates and prints the circumference and area of a circle with radius 22.5. (Hint: The circumference of a circle is $2\pi r$, the area is πr^2. The expression `Math.PI` gives a value for π).

Exercise 1.07 Determine the order of evaluation of the operators in each of the following Java statements, and try to figure out what the value of x, y, and z will be. Then check if you were right by implementing a Java program that prints out the values after running the statements.

```
a.  x = 7 + 3 * 6 / 2 - 1;
b.  y = 2 % 2 + 2 * 2 - 2 / 2;
c.  z = (3 * 9 * ( 3 + ( 9 * 3 / ( 3 ) ) ) );
```

Exercise 1.08 What does the following code print? Think about it first, and then check if you were right by implementing the statement.

```
System.out.println("*\n**\n***\n****\n*****" );
```

Exercise 1.09 What does the following code print? Think about it first, and then check if you were right by implementing the statements.

```
System.out.print( "*" );
System.out.println( "***" );
System.out.println( "*****" );
System.out.print( "****" );
System.out.println( "**" );
```

Exercise 1.10 What will the following program print? Try to figure it out yourself before running the program.

```
public class Expressions
{
  public static void main(String[] args)
  {
     System.out.println(23 * 4.5 / 0.5 + 1);
     System.out.println(23 * 4.5 / (0.5 + 1));
     System.out.println(2 + 5 - 18 + 11);
     System.out.println((2 + 5) - (18 + 11));
     System.out.println(14 * 18 / 4 + 4);
     System.out.println(14 * 18 / (4 + 4));
  }
}
```