Notice: Return your C++ source codes into **Oma** before deadline. Only so you can get credits from this homework. You can't return these source codes after deadline.

Next tasks are from the page 194-195 of Java Book (Silander, Ollikainen & Peltomäki).
URL: http://edu.metropolia.fi/java/Java_Metropolia_AMK.pdf

1. Look at the example of classes **Figure**, **Point** and **Circle** made in Java (figure 1). Make those classes in C++. After that implement a class **Rectangle**. An **angle point**, **width** and **height** are properties of **Rectangle**. Insert in the hierarchy a method **move()**, which moves a figure (means coordinates get different values). Method **move()** gets two parametres x and y. Those parameteres tells a transition. Think carefully in which hierarchy level is the best to implement that methods.

```
1  public class Figure{
2    private int x;
3    private int y;
4
5    public void setX(int x) {
6      this.x = x;
7    }
8    public void setY(int y) {
9      this.y = y;
10   }
11   public int getX() {
12     return x;
13   }
14   public int getY() {
15     return y;
16   }
17 }
18 public class PointXY extends Figure{
19   public void show() {
20     System.out.println("I'm figure (" +
21         getX() + "," + getY() + ")");
22   }
23 }
24 public class Circle extends Figure{
25   private int radius;
26   public void setRadius(int radius) {
27     this.radius = radius;
28   }
29   public void show() {
30     System.out.println("I'm circle which radius is " + radius +
31         " and midpoint is (" + getX() + "," + getY() + ")");
32   }
33 }
```

Figure 1. The definitions of classes Figure, PointXY and Circle

2. In figure 2 you'll see that a grey rectangle is inside the bigger rectangle. Implement a class **Rectangle** which has two properties **width** and **height**. Properties **width** and **height** must be private. Implement also methods **set** and **get** and two parametric constructor. Implement method **area** which returns an area of rectangle.

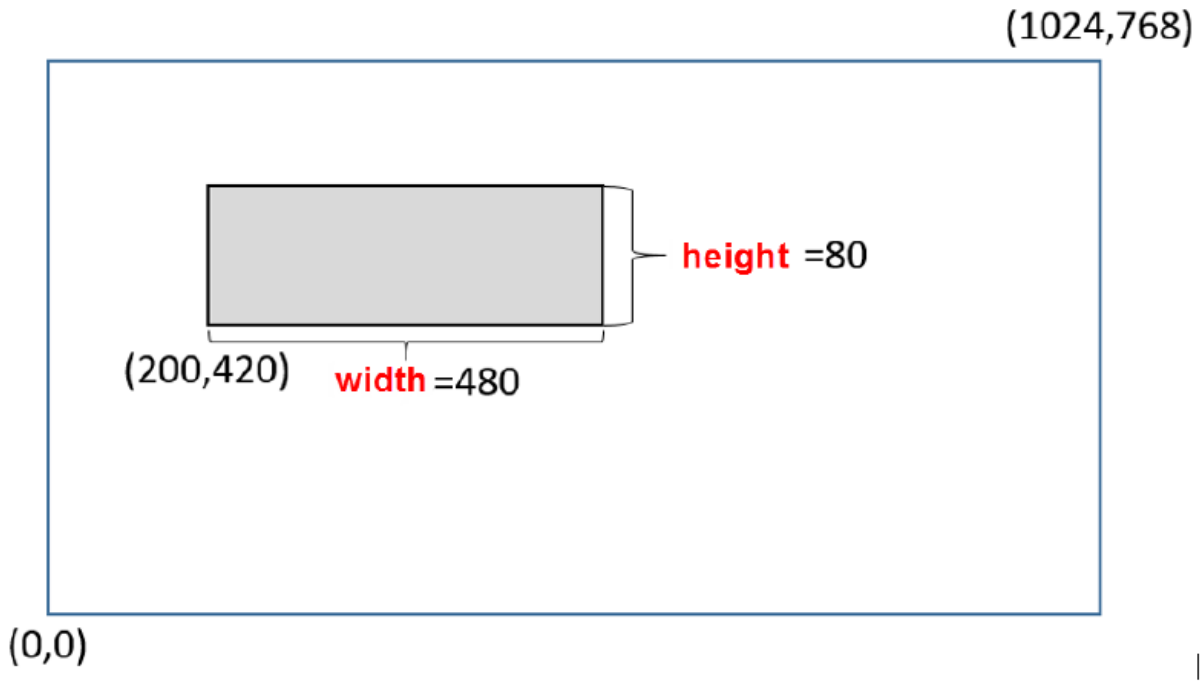

Figure 2. Idea

3. Implement a class **ScreenRectangle** which is a subclass of **Rectangle**. Subclass **ScreenRectangle** has two new properties x and y, which are the coordinates of left down corner. Also x and y are private. Implement four parametric constructor which calls constructor of superclass to set height and width and sets coordinates of corner left down.

4. Implement a class **RectangleTest** in which

   - you create from class **ScreenRectangle** one instance which width is 800, height is 30 and the coordinates of left down corner is (225,120),
   - you have to test with method **fit()** if rectangle you create fits the screen rectangle. You have to create rectangle which size is 1024 x 768
   - you have to print the area of rectangle you create and
   - you have to create rectangle which width is 80 and height 40
   - print the area of rectangle.