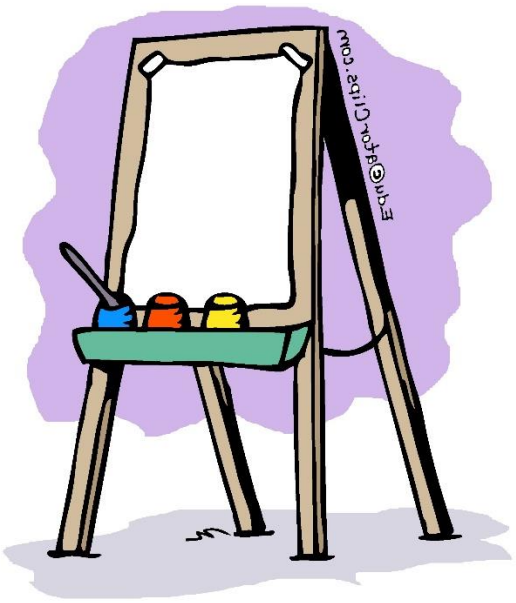
Rectangle Class

1. Make a rectangle class. This code will NOT run until all methods are filled in.

```
public class Rectangle {

	//two instance variables, one for height and another for width.

	public Rectangle() {
		//pick default values, any will do
	}

	public Rectangle(int w, int l) {
	}

	public int area(){
	}

	public int perimeter(){
	}

	public int getWidth(){
	}

	public void setWidth(int w){
	}
	public int getLength(){
	}

	public void setLength(int l){
	}

	public boolean equals(Rectangle r){
		if(r.getLength()==side2 && r.getWidth()==side1)
			return true;
		else
			return false;
	}

	public int compareTo(Rectangle r){
		//if they are equal return 0, otherwise return based on relative areas
		if(r.equals(this))
			return 0;
		else if (r.area()>this.area())
			return -1;
		else
			return 1;
	}

	public String toString(){
		return "width="+side1+", length="+side2;
	}

}
```



2. Create a new class. Paste the code in. If you have coded your Rectangle class correctly, it should run.

(Note: You will need IO too: http://www.gorskicompsci.ca/IO.java)

```
public class RectangleRunner
{
    public static void main (String[] args)
    {
        Rectangle one = new Rectangle ();
        System.out.println ("The dimensions of your rectangle are " + one);
        System.out.println ("The area of the rectangle is " + one.area ());
        System.out.println ("The width is " + one.getWidth ());
        int newwidth = IO.inputInt ("\nWhat is the next rectangle's width?");
        int newheight = IO.inputInt ("What is the next rectangle's height?");
        Rectangle two = new Rectangle (newwidth, newheight);
        System.out.println ("The dimensions of your new rectangle are " + two);
        System.out.println ("The area of the new rectangle is " + two.area ());
        if (two.equals (one))
            System.out.println ("\nThe two rectangles are equal.");
        else
            System.out.println ("The two rectangles are not equal.");
        newwidth = IO.inputInt ("\nEnter a new width?");
        two.setWidth (newwidth);
        System.out.println ("The revised dimensions of your new rectangle are " + two);
    }
}
```