

1. Implement a method called `sumOfNumbersBetween()` that finds the sum of the numbers between two integer numbers including the two numbers. For example, `sumOfNumbersBetween(4, 7)` should return 22 (4+5+6+7). Put your codes in a file and call it `NumberTools.java`
2. Implement a method called `distanceBetween()` that finds the distance between two points. This method should have 4 parameters: the x and y value of the first point and the x and y value of the second point. For example if you wanted to find the distance between A (1, 2) and B (4, 6), you would use `distanceBetween(1, 2, 4, 6)`. In this case the method should return 5. In case you forgot, the formula for the distance (d) between two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is given below:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Put your codes in the same file as the last question. (`NumberTools.java`)

3. Implement a class called `Television` that contains the following information: **brand, size, volume, channel, on**; where **on** indicates the current status of the television being on or off.  
Create a constructor for this `Television` class such that the constructor method signature is `Television(String brand, int size)`.  
Create two functions called `turnOn()` and `turnoff()` that controls the Television of being on or off.  
Create two functions called `turnUpVol()` and `turnDownVol()` to control the volume of the current television.  
Create a function `changeChannel(int newChannel)` that modifies which channel the Television is on. (Hint: the volume and channel of the Television can only be changed when it is on)  
Finally, override the default `toString()` method and make it return the desired information about this Television.  
Put your codes in a file and call it `Television.java`.