Create the following methods

Round (double x, int y) – This method will round the double *x* to *y* decimal places. This method will return the rounded value. If the y is an invalid decimal place, a -1 is returned.

```
Scanner input = new Scanner(System.in);

System.out.println ("Enter a number to be rounded");

double number = input.nextDouble();

System.out.println("Enter the decimal place you want to round " + number);

int decimalPlace = input.nextInt();

double round = Round (number, decimalPlace);

System.out.println(number + " rounded to " + decimalPlace + " place " + "is " + round);
```

```
}

/*
 *  This method will round the double x to y decimal places.
 *  This method will return the rounded value.
 *  If the y is an invalid decimal place, a -1 is returned.
 */
public static double Round (double x, int y) {
        String decimal = String.valueOf(y);
        String round = String. format("%." + decimal + "f", x);
        double roundNum;
        if (y<1) {
                roundNum = -1;
```

```
            }
            else {
                roundNum = Double.parseDouble(round);
            }

            return roundNum;
        }
```

Convert (String x) – will receive a string of digits and return the value as a double.

Increase (double x, double y) – returns the sum of x and y

```
            Scanner input = new Scanner (System.in);
            System.out.println("Enter a value");
            double  x = input.nextDouble();
            System.out.println("Enter another value");
            double y = input.nextDouble();
            System.out.println("The sum of " + x + " and " + y + " is " + Increase(x,y));

        }

        public static double Increase (double x, double y) {
            double sum = x + y;
            return sum;
        }
```

Decrease (double x, double y) – returns y subtracted from x. if y is greater than x, return x.

```
            Scanner input = new Scanner (System.in);
            System.out.println("Enter a value");
```

```
        double x = input.nextDouble();
        System.out.println("Enter another value");
        double y = input.nextDouble();
        System.out.println(y + " subtracted from " + x + " is " + Decrease(x,y));

    }

    public static double Decrease (double x, double y) {
        if (x>y) {
            double subtraction = x - y;
            return subtraction;
        }
        else {
            return x;
        }
    }
```

CalcualteTax (double x) – returns the product of x and 0.13.

```
        Scanner input = new Scanner (System.in);
        System.out.println("Enter total cost:");
        double cost = input.nextDouble();
        System.out.println("Tax on $" + cost + " is $" + CalculateTax(cost));



    }
```

```
	public static double CalculateTax (double x) {
		double tax = x * 0.13;
		tax = Math.round(tax*100.0)/100.0;
		return tax;
	}
```

CalculateDiscount (double x, double y) – returns the product of x and y

```
		Scanner input = new Scanner (System.in);
		System.out.println("Enter the total cost");
		double cost = input.nextDouble();
		System.out.println("Enter the discount:");
		double discount =input.nextDouble();
		System.out.println("The discount on $" + cost + " is $" +
CalculateDiscount(cost,discount));


	}


	//This method calculates the discount
	public static double CalculateDiscount (double x, double y) {
		double discount = x * y;
		return discount;
	}
```

Checkout(double sum, double discount) – This method will calculate and return the final price after the discount and taxes.

```
		Scanner input = new Scanner (System.in);
		System.out.println("Enter total cost:");
		double cost = input.nextDouble();
```

```
		System.out.println("Enter discount:");
		double discount = input.nextDouble();
		System.out.println("The final price after " + discount + " discount and taxes is $" +
Checkout(cost,discount));


	}


	//This method will calculate and return the final price after the discount and taxes.
	public static double Checkout(double sum, double discount) {
		double cost = sum - (sum*discount);
		double totalCost = cost * 0.13;
		return totalCost;
	}
```

You are writing a program for an electronics store. This store needs you to write a basic program that will allow them to enter sales and returns in a day.

This program will first need to read a text file (sales.txt) containing the previous sales. Any sales entered will be saved to that same text file.

To enter sales, your program will offer the following options:

1. *Sale – Prompt the user to enter a positive $ amount. You can continue to enter as many items as you wish until you checkout.*
2. *Display subtotal – Displays the price of your sale before taxes and discount*
3. *Remove item – Prompt user to enter a positive $ amount, removes this amount if it is less than current subtotal.*

4. *Checkout – Calculate and subtract discount from subtotal (10% if sales > $100, 15% if sales > $200), calculates taxes (13%), and saves this sale to the text file, starts a new sale.*
5. *Returns – Prompts the user to enter the amount that is being returned. Saves this to the text file in the proper format (e.g. input 100.50 = -100.50).*
6. *Calculate total – Calculate total sales.*
7. *Exit – exits program*

Sample text file

```
+45.32
+100.30
+265.99
-100.33
+43.55
-100.30
```

```
Scanner input = new Scanner (System.in);

FileOutputStream fos = new FileOutputStream("./sales.txt");

DataOutputStream dos = new DataOutputStream(fos);

double items = 1;

double subtotal = 0;

double remove = 0;

double discount = 0;

double tax = 0;

double total = 0;

while (items!= 0) {

        System.out.println("Enter a positive $ amount:");

        items = input.nextDouble();

        dos.writeDouble(+items);

        subtotal = subtotal + items;

}

System.out.println("Subtotal: $" + subtotal);

System.out.println("Enter a positive $ amount, removes this amount:");

remove= input.nextDouble();

if (remove<subtotal) {

        subtotal = subtotal - remove;

        dos.writeDouble(remove);
```

```
            }
            subtotal = Discount(subtotal);
            tax  = subtotal*0.13;
            total = subtotal + tax;
            dos.writeDouble(total);
            System.out.println("Total: $" + total);
            dos.close();
}

public static double Discount (double subtotal) {
            double discount;
            if (subtotal>=200) {
                        discount = (subtotal*0.15);
                        subtotal = subtotal - discount;
            }
            else if (subtotal>100) {
                        discount = subtotal - (subtotal*0.10);
                        subtotal = subtotal - discount;
            }
            return subtotal;
}
```