```java
public class FracCalc
{
        //instance variables
        private String inputLine;
        private String firstFrac;
        private String secondFrac;
        private String operator;
        private int whole1;
        private int numer1;
        private int denom1;
        private int whole2;
        private int numer2;
        private int denom2;

        private int wholeAnswer;
        private int wholeNumer;
        private int wholeDenom;

        /** This Fraction Calculator class takes two fractions with single digit numerators,
denominators, and whole numbers and adds or subtracts them together. This class has
methods to return the input line, get the operator, get the fractional parts, do calculations,
simplify the answer, and return the final answer.
        @param inputLine the input equation in the form of "x y/z + a b/c" or "x y/z - a b/c"
        */
        public FracCalc(String inputLine)
        {
                this.inputLine = inputLine; //sets the input line

                //identifies if addition or subtraction
                if(inputLine.contains(" + ") == true)
                {
                        int operatorPosition = 0;
                        operatorPosition = this.inputLine.indexOf("+");
                        this.firstFrac = this.inputLine.substring(0,operatorPosition-1); //sets the
first fraction
                        this.secondFrac = this.inputLine.substring(operatorPosition+2,
this.inputLine.length()); //sets the second fraction
                        this.operator = this.inputLine.substring(operatorPosition,
operatorPosition+1); //sets the operator
                }

                if(inputLine.contains(" - ") == true)
                {
```

```java
                int operatorPosition = 0;
                operatorPosition = this.inputLine.indexOf("-");
                this.firstFrac = this.inputLine.substring(0,operatorPosition-1); //sets the
first fraction
                this.secondFrac = this.inputLine.substring(operatorPosition+2,
this.inputLine.length()); //sets the second fraction
                this.operator = this.inputLine.substring(operatorPosition,
operatorPosition+1); //sets the operator
            }

        //evaluates the input to extract the whole number, numerator, and denominator
for both fractions
                char temp = ' ';
                int tempNumber = 0;

                temp = inputLine.charAt(0);
                tempNumber = (int)temp;
                this.whole1 = tempNumber - 48;

                temp = inputLine.charAt(8);
                tempNumber = (int)temp;
                this.whole2 = tempNumber - 48;

                temp = inputLine.charAt(2);
                tempNumber = (int)temp;
                this.numer1 = tempNumber - 48;

                temp = inputLine.charAt(10);
                tempNumber = (int)temp;
                this.numer2 = tempNumber - 48;

                temp = inputLine.charAt(4);
                tempNumber = (int)temp;
                this.denom1 = tempNumber - 48;

                temp = inputLine.charAt(12);
                tempNumber = (int)temp;
                this.denom2 = tempNumber - 48;
        }

    /** This method prints out the whole numbers, numerators, and denominators of the two
fractions in order of printing one part of the fraction for both numbers and then proceeding to the
next part.
```

```java
        */
        public void getFracParts()
        {
                System.out.println(this.whole1);
                System.out.println(this.whole2);
                System.out.println(this.numer1);
                System.out.println(this.numer2);
                System.out.println(this.denom1);
                System.out.println(this.denom2);
        }

        /** This method prints out the operator
        */
        public void getOperator()
        {
                System.out.println(this.operator);
        }

        /** This method prints out the input
        @return the input line
        */
        public String getInputLine()
        {
                return inputLine;
        }

        /**this method calculates the answer's whole number, numerator, and denominator
        */
        public void doCalculation()
        {
                int tempDenom = 0;
                tempDenom = this.denom1 * this.denom2; //finds a common multiple for
denomiators

                int tempNumer1, tempNumer2 = 0;
                //finds the equivalent numerators for the new denominators
                tempNumer1 = (this.numer1 * this.denom2) + (this.whole1 * tempDenom);
                tempNumer2 = (this.numer2 * this.denom1) + (this.whole2 * tempDenom);

                if(this.operator.endsWith("+")==true) //if adding fractions, this path is followed
                {
                        this.wholeAnswer = (tempNumer1 + tempNumer2) / tempDenom; //adds
new numerators together and divides by denominator. rounded down
```

```java
                this.wholeNumer = (tempNumer1 + tempNumer2) % tempDenom; //takes
remainder of sum of numerators divided by denominator
                this.wholeDenom = tempDenom; //sets denominator
            }

            if(this.operator.endsWith("-")==true) //if subtracting fractions, this path is followed
            {
                this.wholeAnswer = (tempNumer1 - tempNumer2) / tempDenom;
//subtracts numerators and divides by denominator
                this.wholeNumer = Math.abs((tempNumer1 - tempNumer2) %
tempDenom); //takes absolute value of remainder of difference of numerators divided by
denominator
                this.wholeDenom = tempDenom; //sets denominator
            }
        }

        /** This method simplifies the fraction
        */
        public void simplify()
        {
            for(int i = this.wholeNumer; i > 0; i--) //makes loop from numerator to 0
            {
                if((this.wholeNumer % i == 0) && (this.wholeDenom % i == 0)) //condition
is met when number divides evenly into both numerator and denominator
                {
                        //simplify!
                        this.wholeNumer = this.wholeNumer / i;
                        this.wholeDenom = this.wholeDenom / i;
                }
            }
        }
        /** This method prints out the answer
        */
        public void getAnswer()
        {
            System.out.println(this.wholeAnswer + " " + this.wholeNumer + "/" +
this.wholeDenom);
        }
}

import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;
```

```java
public class FracCalcTester
{
        public static void main(String[] args) throws FileNotFoundException
        {
                File inFile = new File("input.txt");
                Scanner input = new Scanner(inFile);

                for(int i = 5; i >= 1; i--)
                {
                        FracCalc fc = new FracCalc(input.nextLine());

                        System.out.println(fc.getInputLine());

                        fc.doCalculation();

                        fc.simplify();

                        fc.getAnswer();
                }

        }
}
```

Fractional Calculator

Create a fractional calculator that takes these 5 inputs and generate the following solutions. use 2 class 4 3/4
+ 2 5/6 4 2/3 - 5 3/4 5 3/4 - 3 5/6 2 3/4 - 2 1/2 2 2/3 + 5 3/5

Test Case 1   Test Case 2

Console

```
1    7 7/12
2    -1 1/12
3    1 11/12
4    0 1/4
5    8 4/15
6
```

Input Files
input.txt

❓ Help   Java 8   ⌄

☁️
Drag and drop
or
browse

✓ You passed 2 of 2 test cases

✓ Test Case 1   ✓ Test Case 2

✓ Passed

```
PS C:\Users\saket\JAVA\ClassTesting\FracLab> java FracCalcTester
4 3/4 + 2 5/6
7 7/12
4 2/3 - 5 3/4
-1 1/12
5 3/4 - 3 5/6
1 11/12
2 3/4 - 2 1/2
0 1/4
2 2/3 + 5 3/5
8 4/15
PS C:\Users\saket\JAVA\ClassTesting\FracLab>
```