```java
import java.util.Scanner;

public class FederalTaxRate {

   public static void main(String args[]) {

      Scanner scan = new Scanner(System.in);
      System.out.println("Which marital status best describes you: Married or
Single?");
      String inputtedMaritalStatus = scan.nextLine();
      String letterStatus = inputtedMaritalStatus.substring(0,
1).toLowerCase();

      System.out.println("What is your annual income?");
      double income = scan.nextDouble();
      scan.close();

      double tax = calculateTax(letterStatus, income);
      System.out.println("You must pay $" + tax + " in federal income taxes.");

   }


   public static double calculateTax(String maritalStatus, double income)  {

      double tax = 0.0;


     if (income < 0)  return -2;

     if (maritalStatus.equals("s"))  {
       // Assign the variable tax according to Schedule X

         if (income >= 0 && income <= 11600) {
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        tax = (0.1 * income);

}

else if (income > 11600 && income <= 47150) {


        tax = (1160 + (0.12 * (income - 11600.0)));

}

else if (income > 47150 && income <= 100525) {

        tax = (5426 + 0.22 * (income - 47150.0));

}


else if (income > 100525 && income <= 191950) {

        tax = (17168.50 + 0.24 * (income - 100525));

}


else if (income > 191950 && income <= 243725) {

        tax = (39110.50 + 0.32 * (income - 191950));


}

else if (income > 243725 && income <= 609350) {
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            tax = (55678.50 + 0.35 * (income - 243725));
    }


    else {

            tax = (183627.25 + 0.37 * (income - 609350));
    }


}
else if (maritalStatus.equals("m"))  {
  // Assign the variable tax according to Schedule Y-1


    if (income >= 0 && income <= 23200) {

            tax = (0.1 * income);
    }

    else if (income > 23200 && income <= 94300) {


            tax = (2320 + 0.12 * (income - 23200));

    }

    else if (income > 94300 && income <= 201050) {

            tax = (10852 + 0.22 * (income - 94300));

    }

    else if (income > 201050 && income <= 383900) {
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            tax = (34337 + 0.24 * (income - 201050));
        }

        else if (income > 383900 && income <= 487450) {

            tax = (78221 + 0.32 * (income - 383900));
        }

        else if (income > 487450 && income <= 731200) {

            tax = (111357 + 0.35 * (income - 487450));
        }

        else {

            tax = (196669.50 + 0.37 * (income - 731200));
        }
    }
    else  {
      System.out.println("ERROR:  No tax table found.");
          return -2;  // Decide on a sentinel value; I'll use -1
    }
            tax = Math.round(tax * 100.00) / 100.00;
    // Round tax to the nearest penny and return the value of tax
    return (tax);

  }
}
```