

**Question 1****Version 1**

```
i = 0 : j = 1
i = 2 : i = 4 : j = 4
i = 6 : j = 7
i = 8 : i = 10 : j = 10
i = 12 :
No More!
```

**Version 2**

```
i = 0 : j = 2
i = 3 : i = 6 : j = 6
i = 9 : j = 10
i = 12 : j = 14
i = 15 :
No More!
```

**Version 3**

```
i = 0 : i = 2 : j = 3
i = 4 : i = 6 : j = 6
i = 8 : j = 9
i = 10 : i = 12 : j = 12
i = 14 :
No More!
```

**Version 4**

```
i = 0 : i = 3 : j = 4
i = 6 : j = 8
i = 9 : i = 12 : j = 12
i = 15 : j = 16
i = 18 :
No More!
```

**Question 2****Version 1**

```
i = 2 : j = 0
i = 4 : j = 0
i = 4 : j = 2
i = 6 : j = 0
i = 6 : j = 2
i = 6 : j = 4
```

**Version 2**

```
i = 3 : j = 0
i = 6 : j = 0
i = 6 : j = 3
i = 9 : j = 0
i = 9 : j = 3
i = 9 : j = 6
```

**Version 3**

```
i = 4 : j = 0
i = 8 : j = 0
i = 8 : j = 4
i = 12 : j = 0
i = 12 : j = 4
i = 12 : j = 8
```

**Version 4**

```
i = 5 : j = 0
i = 10 : j = 0
i = 10 : j = 5
i = 15 : j = 0
i = 15 : j = 5
i = 15 : j = 10
```

## Question 3

### Version 1

5:40  
4:20  
4:32  
3:12  
2:6  
2:8  
1:2  
0:0  
0:0

### Version 2

5:40  
4:28  
4:32  
3:27  
3:21  
3:24  
2:6  
1:5  
1:3  
0:0

### Version 3

5:45  
4:32  
4:36  
3:21  
2:12  
1:4  
1:6  
0:0  
0:0  
0:0

### Version 4

5:25  
4:24  
4:20  
3:27  
3:18  
3:15  
2:8  
1:3  
1:4  
0:0  
0:0  
0:0

**Question 4****Version 1**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Enter the hours ");
int hours = keyboard.nextInt();
System.out.println("Enter the minutes ");
int minutes = keyboard.nextInt();
int seconds = (hours*60 + minutes)*60;
System.out.println("For hours = " + hours + " And minutes = " + minutes);
System.out.println("Seconds = " + seconds);
```

**Version 2**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Enter the kilometers ");
int km = keyboard.nextInt();
System.out.println("Enter the meters ");
int meters = keyboard.nextInt();
int centimeters = (km*1000 + meters)*100;
System.out.println("For kilometers = " + km + " And meters = " + meters);
System.out.println("Centimeters = " + centimeters);
```

**Version 3**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Enter the days ");
int days = keyboard.nextInt();
System.out.println("Enter the hours ");
int hours = keyboard.nextInt();
int minutes = (days*24 + hours)*60;
System.out.println("For days = " + days + " And hours = " + hours);
System.out.println("Minutes = " + minutes);
```

**Version 4**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Enter the days ");
int days = keyboard.nextInt();
System.out.println("Enter the hours ");
int hours = keyboard.nextInt();
int seconds = (days*24 + hours)*3600;
System.out.println("For days = " + days + " And hours = " + hours);
System.out.println("Seconds = " + seconds);
```

**Question 5****Version 1**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Please enter a string");
String s = keyboard.next();
String newS = "";
for ( int i = 0 ; i < s.length() ; i += 2 ) {
    newS = newS.concat(s.substring(i+1,i+2) + s.substring(i,i+1));
}
System.out.println("The new String = " + newS);
```

**Version 2**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Please enter a string");
String s = keyboard.next();
String newS = "";
for ( int i = s.length()-1 ; i >= 0 ; i-- ) {
    newS = newS.concat(s.substring(i,i+1));
}
System.out.println("The reverse String = " + newS);
```

**Version 3**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Please enter a string");
String s = keyboard.next();
String newS = "";
for ( int i = 0 ; i < s.length() ; i += 2 ) {
    newS = newS.concat(s.substring(i+1,i+2) + s.substring(i,i+1));
}
System.out.println("The new String = " + newS);
```

**Version 4**

```
Scanner keyboard = new Scanner(System.in);
System.out.println("Please enter a string");
String s = keyboard.next();
String newS = "";
for ( int i = s.length()-1 ; i >= 0 ; i-- ) {
    newS = newS.concat(s.substring(i,i+1));
}
System.out.println("The reverse String = " + newS);
```

**Question 6****Version 1**

```
public class Shopping {
    private float shoes, socks, pants, shirt, tax;

    public Shopping() {
        setAttributes(0, 0, 0, 0, 0);
    }

    public Shopping(float tax) {
        setAttributes(0, 0, 0, 0, tax);
    }

    public Shopping(float shoes, float socks,
                    float pants, float shirt) {
        setAttributes(shoes, socks, pants, shirt, 0);
    }

    private void setAttributes(float shoes, float socks,
                               float pants, float shirt,
                               float tax) {
        this.shoes = shoes;
        this.socks = socks;
        this.pants = pants;
        this.shirt = shirt;
        this.tax = tax;
    }

    public float getTotal() {
        float total = -1;

        if (this.tax != 0) {
            total = (this.shoes + this.socks +
                    this.pants + this.shirt) * (1 + this.tax/100);
        }

        return total;
    }

    public boolean equals(Shopping other) {
        return((this.shoes == other.getShoes()) &&
              (this.socks == other.getSocks()) &&
              (this.pants == other.getPants()) &&
              (this.shirt == other.getShirt()) &&
              (this.tax == other.getTax()));
    }
}
```

```
public float getShoes() {
    return shoes;
}

public void setShoes(float shoes) {
    this.shoes = shoes;
}

public float getSocks() {
    return socks;
}

public void setSocks(float socks) {
    this.socks = socks;
}

public float getPants() {
    return pants;
}

public void setPants(float pants) {
    this.pants = pants;
}

public float getShirt() {
    return shirt;
}

public void setShirt(float shirt) {
    this.shirt = shirt;
}

public float getTax() {
    return tax;
}

public void setTax(float tax) {
    this.tax = tax;
}
}
```

**Question 6****Version 2**

```
public class Dinner {
    private float mealOne, mealTwo, mealThree, mealFour, tax;

    public Dinner() {
        setAttributes(0, 0, 0, 0, 0);
    }

    public Dinner(float tax) {
        setAttributes(0, 0, 0, 0, tax);
    }

    public Dinner(float mealOne, float mealTwo,
                  float mealThree, float mealFour) {
        setAttributes(mealOne, mealTwo, mealThree, mealFour, 0);
    }

    private void setAttributes(float mealOne, float mealTwo,
                               float mealThree, float mealFour,
                               float tax) {
        this.mealOne = mealOne;
        this.mealTwo = mealTwo;
        this.mealThree = mealThree;
        this.mealFour = mealFour;
        this.tax = tax;
    }

    public float getTotal() {
        float total = -1;

        if (this.tax != 0) {
            total = (this.mealOne + this.mealTwo +
                    this.mealThree + this.mealFour) * (1 + this.tax/100);
        }

        return total;
    }

    public boolean equals(Dinner other) {
        return((this.mealOne == other.getMealOne()) &&
              (this.mealTwo == other.getMealTwo()) &&
              (this.mealThree == other.getMealThree()) &&
              (this.mealFour == other.getMealFour()) &&
              (this.tax == other.getTax()));
    }
}
```



```
public float getMealOne() {
    return mealOne;
}

public void setMealOne(float mealOne) {
    this.mealOne = mealOne;
}

public float getMealTwo() {
    return mealTwo;
}

public void setMealTwo(float mealTwo) {
    this.mealTwo = mealTwo;
}

public float getMealThree() {
    return mealThree;
}

public void setMealThree(float mealThree) {
    this.mealThree = mealThree;
}

public float getMealFour() {
    return mealFour;
}

public void setMealFour(float mealFour) {
    this.mealFour = mealFour;
}

public float getTax() {
    return tax;
}

public void setTax(float tax) {
    this.tax = tax;
}
}
```

**Question 6****Version 3**

```
public class Exam {
    private float question1, question2, question3, question4, curve;

    public Exam() {
        setAttributes(0, 0, 0, 0, 0);
    }

    public Exam(float curve) {
        setAttributes(0, 0, 0, 0, curve);
    }

    public Exam(float question1, float question2,
                float question3, float question4) {
        setAttributes(question1, question2, question3, question4, 0);
    }

    private void setAttributes(float question1, float question2,
                               float question3, float question4,
                               float curve) {
        this.question1 = question1;
        this.question2 = question2;
        this.question3 = question3;
        this.question4 = question4;
        this.curve = curve;
    }

    public float getTotal() {
        float total = -1;

        if (this.curve != 0) {
            total = (this.question1 + this.question2 +
                    this.question3 + this.question4) * (1 + this.curve/100);
        }

        return total;
    }

    public boolean equals(Exam other) {
        return((this.question1 == other.getQuestion1()) &&
              (this.question2 == other.getQuestion2()) &&
              (this.question3 == other.getQuestion3()) &&
              (this.question4 == other.getQuestion4()) &&
              (this.curve == other.getCurve()));
    }
}
```

```
public float getQuestion1() {
    return question1;
}

public void setQuestion1(float question1) {
    this.question1 = question1;
}

public float getQuestion2() {
    return question2;
}

public void setQuestion2(float question2) {
    this.question2 = question2;
}

public float getQuestion3() {
    return question3;
}

public void setQuestion3(float question3) {
    this.question3 = question3;
}

public float getQuestion4() {
    return question4;
}

public void setQuestion4(float question4) {
    this.question4 = question4;
}

public float getCurve() {
    return curve;
}

public void setCurve(float curve) {
    this.curve = curve;
}

}
```

**Question 6****Version 4**

```
public class Trip {
    private float travel, hotel, meals, entertainment, tax;

    public Trip() {
        setAttributes(0, 0, 0, 0, 0);
    }

    public Trip(float curve) {
        setAttributes(0, 0, 0, 0, curve);
    }

    public Trip(float travel, float hotel,
                float meals, float entertainment) {
        setAttributes(travel, hotel, meals, entertainment, 0);
    }

    private void setAttributes(float travel, float hotel,
                               float meals, float entertainment,
                               float tax) {
        this.travel = travel;
        this.hotel = hotel;
        this.meals = meals;
        this.entertainment = entertainment;
        this.tax = tax;
    }

    public float getTotal() {
        float total = -1;

        if (this.tax != 0) {
            total = (this.travel + this.hotel +
                    this.meals + this.entertainment) * (1 + this.tax/100);
        }

        return total;
    }

    public boolean equals(Trip other) {
        return((this.travel == other.getTravel()) &&
              (this.hotel == other.getHotel()) &&
              (this.meals == other.getMeals()) &&
              (this.entertainment == other.getEntertainment()) &&
              (this.tax == other.getTax()));
    }
}
```

```
public float getTravel() {
    return travel;
}

public void setTravel(float travel) {
    this.travel = travel;
}

public float getHotel() {
    return hotel;
}

public void setHotel(float hotel) {
    this.hotel = hotel;
}

public float getMeals() {
    return meals;
}

public void setMeals(float meals) {
    this.meals = meals;
}

public float getEntertainment() {
    return entertainment;
}

public void setEntertainment(float entertainment) {
    this.entertainment = entertainment;
}

public float getTax() {
    return tax;
}

public void setTax(float tax) {
    this.tax = tax;
}
}
```