HW2

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Q1-Divisors

```
public class Divisors {
	public static void main(String[] args) {
		int num = Integer.parseInt ( args[0] );
		int div = 1;
		if (num!=0)
		{
			while (div < num)
			{
				if ((num%div)==0)
				{
					System.out.println(div);
				}
				div++;
			}
			System.out.println (num);
		}
		else
		{
			System.out.println("Zero in not acceptable");
		}
	}
}
```

Q2- Reversing a string

```
public class Reverse {
	public static void main(String[] args) {
		String s = args[0];
		for(int i=1; (s.length()-i) >= 0; i++)
		{
			System.out.print(s.charAt(s.length()-i));
		}
		System.out.println();
		if(s.length()%2==0)
		{
			System.out.print("The middle character is " +
			s.charAt((s.length()/2)1));
		}
		else
		{
			System.out.print("The middle character is " +
			s.charAt(s.length()/2));
		}

	}
}
```

Q3-Lucky Streak

```
public class InOrder {
	public static void main(String[] args) {
		int gen1 = (int)(10.0*Math.random());
		int gen2 = 0;
		System.out.println (gen1 + " ");
		while (gen1>=gen2)
		{
			System.out.println (gen1 + " ");
			gen2 = gen1;
			gen1 = (int)(10.0*Math.random());
		}

	}
}
```

Q4-Perfect Number

```
public class Perfect {
	public static void main(String[] args) {
		int num = Integer.parseInt ( args[0] );
		if (num == 0 || num == 1 || num == 2)
		{
			System.out.println(num + " is not a perfect number");
		}
		else
		{
			int sum = 1;
			int div = 2;
			String s = num + " is a perfect number since " + num + " =
			1";
			while (div<num && sum <=num)
			{
				if ((num%div)==0)
				{
					s = s + " + " + div;
					sum = sum + div;
				}
				div++;
			}
			if (sum == num)
			{
				System.out.println (s);
			}
			else
			{
				System.out.println(num + " is not a perfect
				number");
```

```
                    }
                }

            }
        }
```

Q5-Damka Board

```
public class DamkaBoard {
	public static void main(String[] args) {
		int num = Integer.parseInt ( args[0] );
		for(int i = 0; i<num; i++)
		{
			if (i%2==0)
			{
				for (int j = 0; j<num; j++)
				{
					System.out.print("* ");
				}
			}
			else
			{
				for (int j = 0; j<num; j++)
				{
					System.out.print(" *");
				}
			}

			System.out.println();
		}
	}
}
```

Q6-One Of Each

```
public class OneOfEach {
	public static void main(String[] args) {
		int sumChild = 0;
		boolean isBoy = false;
		boolean isGirl = false;
		String child = "";
		while ((!isBoy)||(!isGirl))
		{
			//Its a girl!
			if (Math.random() >= 0.5)
			{
				isGirl = true;
				sumChild++;
				child = child + "g ";

			}
			//Its a boy!
			else
			{
				isBoy = true;
				sumChild++;
				child = child + "b ";
			}
		}
		System.out.println(child);
		System.out.println ("You made it... and you now have " +
		sumChild +" children.");
	}
}
```

Q7-One Of Each Stats

```
public class OneOfEachStats1 {
	public static void main(String[] args) {
		int numOfExperiments = Integer.parseInt ( args[0] );
		int sumChild = 0;
		int sumAllChild = 0;
		boolean isBoy = false;
		boolean isGirl = false;
		int numOfFamiliesWith2 = 0;
		int numOfFamiliesWith3 = 0;
		int numOfFamiliesWith4OrMore = 0;

		for (int i = 0; i<numOfExperiments; i++)
		{
			sumChild = 0;
			isBoy = false;
			isGirl = false;
			while ((!isBoy)||(!isGirl))
			{
				//Its a girl!
				if (Math.random() >= 0.5)
				{
					isGirl = true;
					sumChild++;
				}
				//Its a boy!
				else
				{
					isBoy = true;
					sumChild++;
```

```
                }
        }
        sumAllChild = sumAllChild + sumChild;
        if (sumChild == 2)
        {
                numOfFamiliesWith2++;
        }
        else if (sumChild == 3)
        {
                numOfFamiliesWith3++;
        }
        else
        {
                numOfFamiliesWith4OrMore++;
        }
}


System.out.println("Average: " +
(double)(sumAllChild/(double)numOfExperiments) + " children to
get at least one of each gender.");

System.out.println("Number of families with 2 children: " +
numOfFamiliesWith2);

System.out.println("Number of families with 3 children: " +
numOfFamiliesWith3);

System.out.println("Number of families with 4 or more children: "
+ numOfFamiliesWith4OrMore);

if((numOfFamiliesWith2>=numOfFamiliesWith3)&&(numOfFamili
esWith2>=numOfFamiliesWith4OrMore))

{
        System.out.println("The most common number of children
        is 2.");

}
```

```
        else if
        ((numOfFamiliesWith3>=numOfFamiliesWith2)&&(numOfFamili
        esWith3>=numOfFamiliesWith4OrMore))
        {
                System.out.println("The most common number of children
                is 3.");
        }
        else
        {
                System.out.println("The most common number of children
                is 4 or more.");
        }
}
```

Q8 – One Of Each Stats Final

```
public class OneOfEachStats1 {
	public static void main(String[] args) {
		int numOfExperiments = Integer.parseInt ( args[0] );
		int sumChild = 0;
		int sumAllChild = 0;
		boolean isBoy = false;
		boolean isGirl = false;
		int numOfFamiliesWith2 = 0;
		int numOfFamiliesWith3 = 0;
		int numOfFamiliesWith4OrMore = 0;

		for (int i = 0; i<numOfExperiments; i++)
		{
			sumChild = 0;
			isBoy = false;
			isGirl = false;
			while ((!isBoy)||(!isGirl))
			{
				//Its a girl!
				if (generator.nextDouble()>= 0.5)
				{
					isGirl = true;
					sumChild++;
				}
				//Its a boy!
				else
				{
					isBoy = true;
					sumChild++;
```

```
                }
        }
        sumAllChild = sumAllChild + sumChild;
        if (sumChild == 2)
        {
                numOfFamiliesWith2++;
        }
        else if (sumChild == 3)
        {
                numOfFamiliesWith3++;
        }
        else
        {
                numOfFamiliesWith4OrMore++;
        }
}


System.out.println("Average: " +
(double)(sumAllChild/(double)numOfExperiments) + " children to
get at least one of each gender.");

System.out.println("Number of families with 2 children: " +
numOfFamiliesWith2);

System.out.println("Number of families with 3 children: " +
numOfFamiliesWith3);

System.out.println("Number of families with 4 or more children: "
+ numOfFamiliesWith4OrMore);

if((numOfFamiliesWith2>=numOfFamiliesWith3)&&(numOfFamili
esWith2>=numOfFamiliesWith4OrMore))

{
        System.out.println("The most common number of children
        is 2.");

}
```

```
                else if
                ((numOfFamiliesWith3>=numOfFamiliesWith2)&&(numOf
                FamiliesWith3>=numOfFamiliesWith4OrMore))
            {
                System.out.println("The most common number of children
                is 3.");
            }
            else
            {
                System.out.println("The most common number of children
                is 4 or more.");
            }
        }
}
```