midterm1-prep-inclass-sol.txt

1.

```
public static void problem1()
{
    for (int i = 3; i < 61; i += 3)
    {
        if (i % 2 == 0) {
            System.out.println(i);
        }
    }
}
```

2.

```
public static int[] reverseArray(int[] array)
{
    int[] rev = new int[array.length];
    int j = array.length-1;
    for (int i = 0; i < rev.length; i++)
    {
        rev[i] = array[j];
        j--;
    }
    return rev;
}
```

3.

```
public static int countZeroRows(int[][] matrix)
{
    int count = 0;
    for (int row = 0; row < matrix.length; row++)
    {
        for (int col = 0; col < matrix[row].length; col++)
        {
            if (matrix[row][col] == 0) {
                count++;
                break;  // skip the rest of this row once a zero is found
            }
        }
    }
    return count;
```

```
    }
```

3. (another way)

```
    public static int countZeroRows(int[][] matrix)
    {
        int countRowsWithAZero = 0;
        for (int row = 0; row < matrix.length; row++)
        {
            int countZerosOnThisRow = 0;
            for (int col = 0; col < matrix[row].length; col++)
            {
                if (matrix[row][col] == 0) {
                    countZerosOnThisRow++;
                }
            }
            if (countZerosOnThisRow >= 1) {
                countRowsWithAZero++;
            }
        }
        return countRowsWithAZero;
    }
```

4.

```
public class Die {
    private int roll;

    public Die()
    {
        roll = (int)(Math.random() * 6 + 1); // roll the die the first time
    }

    public int roll() {
        roll = (int)(Math.random() * 6 + 1);
        return roll; // could also make a void function and not return anything
    }

    public int getCurrentRoll() {
        return roll;
    }
}
```

5.

(continuation of the main function:)

```
Date bday = new Date(m, d, 2021);
Date today = new Date(10, 6, 2021);

int daysBetween = bday.daysBetween(today); // get days between today and bday

if (today.isBefore(bday)) {
   System.out.println("Your birthday hasn't arrived this year yet.");
   System.out.println("It is " + daysBetween + " days away!");
}
else if (bday.isBefore(today)) {
   System.out.println("Your birthday has already occurred this year.");
   System.out.println("It is " + daysBetween + " past your birthday.");
}
else {
        System.out.println("Today is your birthday!");
}

// You could also use the equal() method to test if today is your birthday.
```