The Math Class (Java 8 API):

The Math Class provides useful methods for performing basic numeric operations.

Important Constants:

- Math.PI: provides a good approximation of PI
- Math.E: provides a good approximation of e

Important Methods:

- Math.max(a,b): returns the maximum value between a and b
- Math.min(a,b): returns the minimum value between a and b
- Math.pow(a,b): returns the value of a^b
- Math.abs(a): returns the value of |a|
- Math.random(): returns a random double between 0.0 and 1.0

The String Class (Java 8 API):

The String Class provides useful methods for performing operations on Strings as a whole and individual chars within Strings

Important Methods:

- charAt(int index): Returns the char value at the specified index.
- contains(String s): Returns whether or not the calling object contains the s
- equals(String s): Returns whether or not the String objects are equal
- length(): Returns the length of the String
- substring(int a, int b): Returns the String starting at index a up to b [a,b)
- trim(): removes leading and trailing whitespace
- toLowerCase(): returns the String all in lowercase
- toUpperCase(): returns the String all in UPPER CASE

The Arrays Class (Java 8 API):

The Arrays class provides useful methods for manipulating arrays

Important Methods:

- binarySearch(int[] arr, int key): performs a binary search on the array.
- equals(int[] arr1, int[] arr2): returns true if the arrays are equal to each
- sort(int[] arr): sorts the array in ascending order
- toString(): returns a String representation of the array

The ArrayList Class (Java 8 API):

The ArrayList class provides useful methods for manipulating ArrayLists

Important Methods:

- add(E e): Appends the element to the end of the list
- add(int index, E e): Appends the element at the specified index and shifts the rest of the elements accordingly
- clear(): removes all elements from the list
- contains(Object o): returns true if the Object is present in the list
- get(int index): returns the element at the given index
- isEmpty(): returns true if the list is empty
- remove(int index): removes the element at the given index
- remove(Object o): removes the first instance of Object o if it is present
- set(int index, E e): replaces the element at index with e
- size(): returns the size of the list
- toArray() returns an array filled with all elements of the list in proper order