Here's a table listing all the vector methods available in Java for problem solving:

Method	Description
`add(E e)`	Appends the specified element to the end of the vector.
`add(int index, E element)`	Inserts the specified element at the specified position in the vector.
`addAll(Collection<? extends E> c)`	Appends all of the elements in the specified collection to the end of the vector.
`addAll(int index, Collection<? extends E> c)`	Inserts all of the elements in the specified collection into the vector at the specified position.
`capacity()`	Returns the current capacity of the vector.
`clone()`	Returns a shallow copy of the vector.
`elementAt(int index)`	Returns the element at the specified position in the vector.
`ensureCapacity(int minCapacity)`	Ensures that the vector can hold at least the specified number of elements.
`get(int index)`	Returns the element at the specified position in the vector.

`indexOf(Object o)`	Returns the index of the first occurrence of the specified element in the vector.
`insertElementAt(E obj, int index)`	Inserts the specified object at the specified position in the vector.
`isEmpty()`	Checks if the vector is empty.
`lastIndexOf(Object o)`	Returns the index of the last occurrence of the specified element in the vector.
`lastElement()`	Returns the last element of the vector.
`remove(int index)`	Removes the element at the specified position in the vector.
`remove(Object obj)`	Removes the first occurrence of the specified element from the vector.
`removeAllElements()`	Removes all elements from the vector.
`set(int index, E element)`	Replaces the element at the specified position with the specified element.
`setSize(int newSize)`	Sets the size of the vector. If the new size is greater, it fills the new slots with `null`.

`size()`	Returns the number of elements in the vector.
`toArray()`	Returns an array containing all elements in the vector.
`toArray(T[] a)`	Returns an array containing all elements of the vector in the proper sequence.
`trimToSize()`	Trims the capacity of the vector to the current size.

These methods are used frequently when working with vectors to solve various problems like manipulating lists, managing memory, or performing searches and insertions.