

FreeCandy.java

```
1 public class FreeCandy implements Edible {
2
3     private int calories;
4
5     public FreeCandy(int calories) {
6         this.calories = calories;
7     }
8
9     public int getCalories() {return this.calories;}
10 }
```

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Product.java

```
1 public abstract class Product {
2     String name;
3     int price;
4
5     public int getPrice() { return price; }
6     public String getName() {return name;}
7
8     public Product(int price, String name) {
9         this.price = price;
10        this.name = name;
11    }
12 }
```

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class java.util.ArrayList<E>

The following excerpts from the javadoc for java.util.ArrayList<E> may be helpful to you in completing this exam.

Inheritance Hierarchy (complete)

```
java.lang.Object
  java.util.AbstractCollection<E>
    java.util.AbstractList<E>
      java.util.ArrayList<E>
```

All Implemented Interfaces: Serializable, Cloneable, Iterable<E>, Collection<E>, List<E>, RandomAccess

Direct Known Subclasses: ArrayList, RoleList, RoleUnresolvedList

Constructors (complete)

ArrayList()	Constructs an empty list with an initial capacity of ten.
ArrayList(Collection<? extends E> c)	Constructs a list containing the elements of the specified collection, in the order they are returned by the collection's iterator.
ArrayList(int initialCapacity)	Constructs an empty list with the specified initial capacity.

Most important methods, with brief description

boolean add(E e)	Appends the specified element to the end of this list.
void add(int index, E element)	Inserts the specified element at the specified position in this list. Shifts the element currently at that position (if any) and any subsequent elements to the right (adds one to their indices). throws IndexOutOfBoundsException if (index < 0 index > size())
void clear()	Removes all of the elements from this list.
E get(int index)	Returns the element at the specified position in this list.
int indexOf(Object o)	Returns the index of the first occurrence of the specified element in this list, or -1 if this list does not contain the element.
boolean isEmpty()	Returns true if this list contains no elements.
int lastIndexOf(Object o)	Returns the index of the last occurrence of the specified element in this list, or -1 if this list does not contain the element.
E remove(int index)	Removes the element at the specified position in this list.
boolean remove(Object o)	Removes the first occurrence of the specified element from this list, if it is present.
E set(int index, E element)	Replaces the element at the specified position in this list with the specified element. Returns the element previously at the specified position throws IndexOutOfBoundsException if (index < 0 index >= size())
int size()	Returns the number of elements in this list.
void sort(Comparator<? super E> c)	Sorts this list according to the order induced by the specified Comparator.

Additional methods, listed by method signature only.

boolean addAll(Collection<? extends E> c)	boolean addAll(int index, Collection<? extends E> c)
Object clone()	boolean contains(Object o)
void ensureCapacity(int minCapacity)	void forEach(Consumer<? super E> action)
Iterator<E> iterator()	ListIterator<E> listIterator()
ListIterator<E> listIterator(int index)	boolean removeAll(Collection<?> c)
boolean removeIf(Predicate<? super E> filter)	protected void removeRange(int fromIndex, int toIndex)
void replaceAll(UnaryOperator<E> operator)	boolean retainAll(Collection<?> c)
Spliterator<E> spliterator()	List<E> subList(int fromIndex, int toIndex)
Object[] toArray()	<T> T[] toArray(T[] a)
void trimToSize()	

Methods inherited from:

class java.util.AbstractList	equals, hashCode
class java.util.AbstractCollection	containsAll, toString
class java.lang.Object	finalize, getClass, notify, notifyAll, wait, wait, wait
interface java.util.List	containsAll, equals, hashCode
interface java.util.Collection	parallelStream, stream

End of Handout