Critical Thinking Chapter 9

1. The third element of an array is at index 2.

2. int[] quantities = new int[20];

3. double[] heights = {1.65, 2.15, 4.95};

4.
```
for (int grade : grades)
{
    System.out.println(grade);
}
```

6. Passing an entire array to a method sends a reference to the whole array, allowing the method to access and modify all elements. Passing a single element sends only that value, so changes do not affect the original array.

7. Offset array indexes are sometimes required when the data starts at a number other than zero, or when aligning array positions with real-world numbering (for example, months numbered 1–12).

8. Character at index 3 of "Elaine" is i.
    Output: i

10. A dynamic array (such as an ArrayList) is better when the number of elements changes frequently, because it automatically resizes and handles additions and deletions more easily than a fixed-size array.

11. indexOf() uses the .equals() method to compare the object passed in with each element of the ArrayList. If .equals() returns true, the index of the matching element is returned.

12. Wrapper class objects are compared using the .equals() method, which checks whether their stored values are the same. Using == compares object references, not values