

CRT CH9

1.

What index value does the third element of an array have?

Index 2 (arrays are zero-based).

2.

Declaration for an array named `quantities` that stores 20 integers:

```
int[] quantities = new int[20];
```

3.

Declaration for an array named `heights` storing 1.65, 2.15, and 4.95:

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

4.

For-each statement that displays integer values in an array named `grades`:

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

6.

How does passing an entire array differ from passing a single element?

Passing an array gives the method access to all elements, and changes affect the original array.

Passing a single element only passes a copy of that value, so changes do not affect the array.

7.

Why are offset array indexes required in some cases?

When array data represents values that don't start at zero, offsets allow mapping real-world values (like years or IDs) to valid array indexes.

8.

What output is displayed?

```
String name = "Elaine";  
System.out.println(name.charAt(3));
```

Output:

i

(E=0, l=1, a=2, i=3)

10.

Example of when a dynamic array is better than an array:

When the number of elements is unknown or frequently changes, such as storing user input or a growing list of names using an `ArrayList`.

11.

How does `ArrayList.indexOf()` determine equality?

It uses the `.equals()` method to compare the object passed with elements in the list.

12.

How can wrapper class object values be compared?

Using the `.equals()` method (not `==`).