1. **What index value does the third element of an array have?**
   - The index value the third element has is number 2.

2. **Write the declaration for an array named quantities that stores 20 integers.**
   - Int[] quantities = new int[20]

3. **Write a declaration for an array named heights storing the numbers 1.65,2.15,4.96.**
   - Double heights = (1.65,2.15,4.96)

4. **Write a for-each statement that displays the integer values stored in an array named grades.**
   - for(int grades:grades)
     {
        system.out.println(grades)
     }

5. **Write an algorithm for inserting data into an array so that existing data is moved up one position to make room for the new data.**
   - for (int i = 0; i < position; i++)
     {
           array[i+1] = array[i]
     }

   Write an algorithm for deleting data from an array so that existing data is moved to the gap made by the deleted data.
   - for (int i = 0; i < position; i++)
     {
           array[i-1] = array[i]
     }

6. **How does passing an entire array to a method differ from passing a single element of the array?**
   - By passing the array the entire array we are able to modify the element in the memory on the other hand when we pass a single element of an array we are able to modify the copy of the array.

7. **Why are offset array indexes required in some cases?**
   - Offset array indexes are required in some cases because when the first element in an array is not used, being able to offset it can save some space and memory.

8. **What output is displayed by the statements below?**
   - The output displays the 4th character in the name Elaine which is "i" which is in the third index.