Array and ArrayList Exercises

1. Given
   ```
   int[] list = {2, 4, 6, 8, 10, 12, 14, 16, 18};
   ```
   Write the code to remove the middle value from *list* and place it at the end.

2. Given
   ```
   int[] list = {2, 4, 6, 8, 10, 12, 14, 16, 18};
   ```
   Write the code to insert a copy of the last value in *list* into the middle of *list*.

3. Given
   ```
   ArrayList<Integer> aList = new ArrayList<Integer>();
   ```
   Assume *aList* has been populated with a list of integers. Write the code to remove the middle value in *alist* and place it at the end of the list.

4. Given
   ```
   ArrayList<Integer> aList = new ArrayList<Integer>();
   ```
   Assume *aList* has been populated with a list of integers. Write the code to remove the last value in *alist* and place it in the middle of the list.

5. Here is an e-mail I received from a high school computer science teacher. How would you answer it?

   ```
   Could someone help me explain this problem...

   Why does:
       String letters[] = {"A", "B", "C"};
       ArrayList<String> list = new ArrayList<String>(3);

       int i;
       for (i = 2; i >= 0; i--)
         list.set(i, letters[i]);

       for (i = 0; i < list.size(); i++)
         System.out.print(list.get(i));

   Produce an:
   IndexOutOfBoundsException

   Thank you,

   Joseph Gyulay
   Mathematics-Computer Science Teacher
   Soccer-Wrestling Coach
   ```