Computer Science 1	Exercises 13.03-05	Date:
Name:		Period:

1. What does the **len** function return?

2. Both the **append** command and the **insert** command will add a new item to an array.
   How are these 2 commands different?

3. What do the **index** and **remove** commands do if the item to be found or removed exists in the array more than once?

4. What happens if you attempt to remove an item that does not exist from an array?

5. What happens if you attempt to find the index of an item that does not exist in an array?

6. Refer to your answer to the previous two questions. How can you prevent this from happening?

7. Use an array to shorten this command:

```
validGrade = grade == 'A' or grade == 'B' or grade == 'C' or grade == 'F' or
             grade == 'a' or grade == 'b' or grade == 'c' or grade == 'f'
```

8. Both the **remove** command and the **del** command will remove/delete an item from an array.
   How are these 2 commands different?

9. Look closely at the **names** array in **ArrayCommand13.py**.
   In this array, **"John"** is at index **0** and **"Heidi"** is at index **3**.
   Why is it that when the commands **`del names[0]`** and **`del names[3]`** are executed,
   "Heidi" is still in the array?

10. List 2 things that **pop** can do that **del** cannot.

11. Refer to program **ArrayCommand14.py**. Write a single line of code that will remove all of the names from the list, except for **"John"** and **"David"**.

12. Refer to the previous question. Can **pop** do this?

13. When working with Python arrays, what command does the same this as the **+=** operator?

14. What happens when you use the **sort** command on an array of strings?

15. What happens when you use the **sort** command on an array of numbers?

16. What do you need to do to sort an array of numbers in descending order?

17. How is the **sorted** command different from **sort**?

18. Look at program **ArrayCommands21.py** and its output. Even though the **sort** command was used with the **animals** array, the output looks weird. What causes this?

19. Refer to the previous question. How do you fix this problem?

20. Look at program **RandomArrays01.py**. Change one statement in the program to make it store random 4-digit numbers instead of random 3-digit numbers?

21. Look at program **RandomArrays02.py**. This program displays random sentences. How is that possible?

22. Is the **for..each** loop able to display the content of an array?

23. Is the **for..each** loop able to alter the content of an array?