

1.11 EXERCISES

1. If `i` is an integer and `p` and `q` are pointers to integers, which of the following assignments cause a compilation error?

- | | | |
|------------------------------|------------------------------|-------------------------------|
| a. <code>p = &i;</code> | e. <code>i = *&p;</code> | i. <code>q = **&p;</code> |
| b. <code>p = *&i;</code> | f. <code>i = *&p;</code> | j. <code>q = *&p;</code> |
| c. <code>p = *&i;</code> | g. <code>p = *&i;</code> | k. <code>q = *&p;</code> |
| d. <code>i = *&p;</code> | h. <code>q = *&p;</code> | |

2. Identify the errors; assume in (b) and (c) that `s2` has been declared and assigned a string:

- a.

```
char* f(char *s) {
    char ch = 'A';
    return &ch;
}
```
- b.

```
char *s1;
strcpy(s1,s2);
```
- c.

```
char *s1;
s1 = new char[strlen(s2)];
strcpy(s1,s2);
```

3. Providing that the declarations

```
int intArray[] = {1, 2, 3}, *p = intArray;
```

have been made, what will be the content of `intArray` and `p` after executing individually (not in sequence)

- a. `*p++;`
 - b. `(*p)++;`
 - c. `*p++; (*p)++;`
4. Using only pointers (no array indexing), write
- a. A function to add all numbers in an integer array.
 - b. A function to remove all odd numbers from an ordered array. The array should remain ordered. Would it be easier to write this function if the array were unordered?
5. Using pointers only, implement the following string functions:
- a. `strlen()`
 - b. `strcmp()`
 - c. `strcat()`
 - d. `strchr()`
6. What is the difference between `if (p == q) { ... }` and `if (*p == *q) { ... }`?