

1c

-32,768

1d

32,767

2

```
1 void swapArrays(int* a, int*b, int n) {
2     int i;
3     int *tmp = (int*)malloc(n*sizeof(int));
4     for(i = 0; i < n; ++i) {
5         *(tmp+i) = *(a+i);
6     }
7
8     for(i = 0; i < n; ++i) {
9         *(a+i) = *(b+i);
10        *(b+i) = *(tmp+i);
11    }
12 }
13 }
```

2

```
1 void swapArrays(int* a, int*b, int n) {
2     int i;
3     int *tmp = (int*)malloc(n*sizeof(int));
4     for(i = 0; i < n; ++i) {
5         *(tmp+i) = *(a+i);
6     }
7
8     for(i = 0; i < n; ++i) {
9         *(a+i) = *(b+i);
10        *(b+i) = *(tmp+i);
11    }
12 }
13 }
```

3a

```
1 char* changeCase(char* str) {
2     char* p;
3     char* result;
4     result = (char*) malloc(strlen(str)*sizeof(char));
5     strcpy(result, str);
6     for( p=result; *p!=0; p++ ) {
7         if ((int)*p > 64 && (int)*p < 91) {
8             *(p) = (char)((int)*p + 32);
9         }
10    }
```

```

10 }
11 }
12 return result;
13 }

```

3b

```

1 void changeCase_by_ref( char** n ) {
2     /* Fill-in */
3     changeCase(*n);
4 }

```

4a

```

1 void setName(Student* s, const char* name) {
2     /* fill me in */
3     s->name = name;
4 }
5
6 unsigned long getStudentID(const Student* s) {
7     /* fill me in */
8     return s->sid;
9 }
10
11
12 void setStudentID(Student* s, unsigned long sid) {
13     /* fill me in */
14     s->sid = sid;
15 }

```

4b

The variable will vanish into dust and disappear when the function returns to where it was called from. The lifetime of "Student s" is within the function scope.