NAME:

1. (5 pts) What would be printed from the following program block?
   ```c
   char s1[10] = "racecar";
   char *s2 = "raceCar";
   int diff;
   diff = strcmp(s1, s2);
   printf("%d\n", diff);
   ```

2. (6 pts) Fill in the blank boxes to complete the following function.
   ```c
   int *find_largest(int a[], int n);
   ```
   When passed an array a of length n, the function will return a pointer to the array’s largest element.
   ```c
   int *find_largest(int a[], int n)
   {
       int i, *largest;
       largest = &a[0];
       for (i = 1; i < n; i++)
       {
           if (a[i] > )
               largest = &a[i];
       }
       return ;
   }
   ```

3. (9 pts) Do Exercise #1 in the textbook p.273.

<table>
<thead>
<tr>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
<th>(d)</th>
<th>(e)</th>
</tr>
</thead>
</table>

4. (6 pts) Do Exercise #3 in the textbook p.308.

<table>
<thead>
<tr>
<th>i</th>
<th>j</th>
<th>s</th>
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</table>
5. (4 pts) Rewrite the following function to use pointer arithmetic instead of array subscripting. Fill in the black boxes to complete the work.

```c
int sum_two_dimensional_array(const int a[][LEN], int n)
{
    int i, j, sum = 0;
    for (i = 0; i < n; i++)
        for (j = 0; j < LEN; j++)
            sum += a[i][j];
    return sum;
}
```

```c
int sum_two_dimensional_array(const int a[][LEN], int n)
{
    int *p, sum = 0;
    for (p = a[0]; p < a[0] + LEN; p++)
        sum += *p;
    return sum;
}
```


7. (6 pts) We have the following declaration:

```c
typedef enum {ONE = 1, TWO = 2} NUM;
typedef union {
    char num1;
    int num2;
} UNUM;
typedef struct {
    float fb;
    NUM num;
    UNUM f;
    float fa;
} SNUM;
```

Given a structure variable named `snum`, write a statement that refers to `num1`. 

```c
```