CMSC 202 **Solutions to Recursion Problems** Spring 1996
Sections 101, 102 & 103 Handout #6

Here are sample solutions to the problems presented at the end of Handout 4. Other solutions are possible.

1.

```
int
count_occurrences(int array[], int count, int num_to_count)
{
  if (count == 0)
    return(0);
  else if (array[count - 1] ==  num_to_count)
    return(count_occurrences(array, count - 1,  num_to_count) + 1);
  else return(count_occurrences(array, count - 1,  num_to_count));
}
```

2.

```
int
count_7s(int number)
{
  if (number < 0)
    return(count_7s(-number));
  else if (number == 0)
    return(0);
  else if (number % 10 == 7)
    return(count_7s(number / 10) + 1);
  else return(count_7s(number / 10));
}
```

3.

```
void
replace_char(char *string, char old, char new)
{
  if (*string != '\0') {
    if (*string == old)
      *string = new;
    replace_char(string + 1, old, new);
  }
}
```