1. Write a method with the following specification.
   Parameters: ls, the first ListItem of a list
   k, an integer
   Return: the number of times that k occurs in the list
   Do not modify the list. Note that ls could be null.

   Example: Given (4 5 7 5 5 2) and k=5, the method
   would return 3, since 5 occurs 3 times

   ```java
   public class ListItem {
       public int number;
       public ListItem next;
       public ListItem(int number, ListItem next){
           this.number = number;
           this.next = next;
       }
   }
   ```

2. Complete the following table. Show your work below.

<table>
<thead>
<tr>
<th>The number…</th>
<th>In base…</th>
<th>Equals the number…</th>
<th>In base…</th>
</tr>
</thead>
<tbody>
<tr>
<td>1010101</td>
<td>2</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>125</td>
<td>10</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>40</td>
<td>5</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>205</td>
<td>8</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>