Consider the following functions from the ImageViewer Lab:

// Function: shuffle_images
// Description: Function used to randomly rearranging the positions of images within the picsRank array.
// Inputs: none
// Outputs: none
1. function shuffle_images()
2. {
3. for (i = 0; i < num_pics - 1; i++)
4. {
5.   // generate random number between 'i+1' and 'num_pics-1'
6.   rand_num = i + 1 + Math.floor(Math.random() * (num_pics-i-1));
7.   // swap image i with image rand_num
8.   swap_image(i, rand_num);
9. }
10. }

// Function: swap_images
// Description: Utility function used to swap the positions of two different images.
// Inputs:
// p1: A number, index of the first image to swap
// p2: A number, index of the second image to swap
// Outputs: none
9. function swap_images(p1, p2)
10. {
11.   var temp;
12.   temp = picsRank[p1];
13.   picsRank[p1] = picsRank[p2];
14.   picsRank[p2] = temp;
15. }

(a) Assume that num_pics = 10 and that for all image index values i between 0 and 9, picsRank[i] = i.
Consider the function call swap_images(0,9) and list the values of temp, picsRank[p1] and picsRank[p2]

- just before line 12 is executed,
- just after line 12 is executed,
- just after line 13 is executed,
- just before line 14 is executed.

(b) As in part (a), assume that num_pics = 10 and that for all image index values i between 0 and 9, picsRank[i] = i. Consider a call to function shuffle_images(). How many times is the function swap_images called?
(c) Describe the effect of the following function call: `swap_images(5, 5)`. Describe how function `swap_images` can be modified to avoid wasting valuable computation cycles in cases like this. *Hint: Use an if-statement.*

(d) Explain line 5 precisely and concisely. What kind of a statement is it? What are its effects?

(e) Imagine replacing line 5 with the following statement:

```javascript
rand_num = num_pics - 1;
```

How does this change the effect of function `shuffle_images`?

(f) Imagine replacing line 3 with the following statement:

```javascript
for (i = 0; i < num_pics / 2 - 1; i++)
```

How does this change the effect of function `shuffle_images`?

(g) Implement a 'goto first' button from the code below:

```javascript
// Function: goto_first_image
// Description: Function used to set the current image to the first image in the list
1. function goto_first_image() 
2. { 
3. //insert code here 
4. document[current_img_name].src = pics[ picsRank[current_img] ];
5. document.form1.text1.value = pics_text[ picsRank[current_img] ];
6. document.img1.width = pics_width[ picsRank[current_img] ];
7. document.img1.height = pics_height[ picsRank[current_img] ];
8. }
```