1. Fill in the first level of the recursion tree for Mergesort in the figure below:

```
S: 23 3 16 -1 42 17 52 8 32 16
```

```
S1:
```

```
S2:
```

2. Fill in the first level of the recursion tree for Quicksort in the figure below. Use the last element in the list as the pivot.

```
S: 23 3 16 -1 42 17 52 8 32 16
```

```
L:
```

```
E:
```

```
G:
```

3. The following tree is not an AVL tree. Indicate how it violates the AVL property by shading in the node or nodes in the tree below which are not height-balanced.