Homework 3

Group 42

Caleb Ewer,   cewer,   cewer@asu.edu

Lorenzo Stewart,   lkstewa2,   lkstewa2@asu.edu

Samuel Ketcham,   scketch1,   scktech1@asu.edu

Miranda Coston,   mcoston,   mcoston@asu.edu

3.2

recursiveMergeSort() will be called 11 times

3.5

list = {5,4,2,9,1,7,3,8,6}, pivot = 5, leftIndex = -1, rightIndex = 9

While loop pass 1:

      leftIndex ends up at 0, rightIndex ends up at 6

      leftIndex < rightIndex so swap list[0] and list[6]: list = {3,4,2,9,1,7,5,8,6}

While loop pass 2:

      leftIndex ends up at 3, rightIndex ends up at 4

      leftIndex < rightIndex so swap list[3] and list[4]: list = {3,4,2,1,9,7,5,8,6}

While loop pass 3:

      leftindex ends up at 4, rightindex ends up at 4

While loop termintates because leftIndex = 4 is >= rightIndex = 4

partition() returns 4 so list$_L$ = {3,4,2,1}, list$_R$ = {9,7,5,8,6}

4.1

included in the Zip folder

4.3

included in the Zip folder

5.1

A. 5, 6, 2, 9

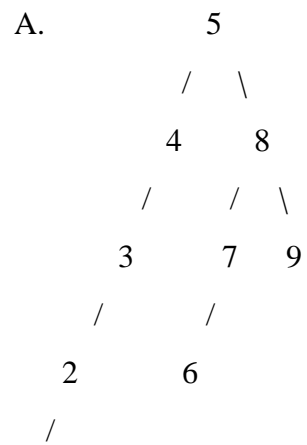B. 3, 7

C. 5, 9, 1, 4

D. 7, 8, 6, 2, 3

5.2

C. $7 - 8 - 5 - 6 - 2 - 9 - 3 - 1 - 4$

5.3

included in the Zip folder

5.6

A.
```
                5
              /   \
            4       8
           /       /  \
          3       7    9
         /       /
        2       6
       /
      1
```

B. The height of the tree would be 5