Julia Diliberto CST 370 Extra Credit Homework February 22, 2016

1a. 15

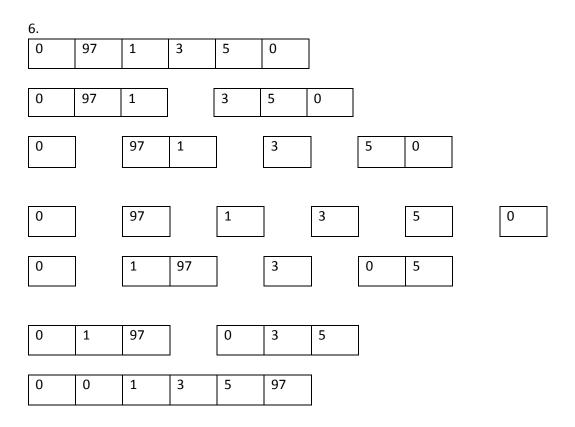
1b. 0

1c. 0

1d. The recursion will never end because the end condition (n=0) will never be met.

$$2 1 + (1/2 + \frac{1}{4} + \frac{1}{8} + ...) = 1 + 1 = 2$$

- 3. O(log n), O(log log n), O(n), O(nlogn), O(n²)
- 4. Sorts A in ascending order, O(n²)
- 5. a. In each case, the problem size is the number of people in the room. b. Alg 1: one question, Alg 2: ask everyone, n questions; Alg 3 ask everyone, however it requires k questions to ask each kth person. So there will be 1 + 2 + 3...n questions asked...n(n+1)/2 c. constant, linear, quadratic



0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1	0	0	0	0	0
0	0	0	0	0	1	0	0	1	1	0	0	0
0	0	0	0	0	1	0	0	0	1	0	1	1
0	0	0	0	0	0	1	0	0	0	1	0	0
0	0	0	0	0	0	1	1	0	0	1	1	0
0	0	0	0	0	0	0	0	1	1	0	1	0
0	0	0	0	0	0	0	1	0	1	1	0	1
0	0	0	0	0	0	0	1	0	0	0	1	0