1. In the circumstances where there would be a large list of elements to compare or to look for something in a large list; because sequential search compares each element individually which is very time consuming. It would take very long time to search each individual element compared to other search algorithms.
2. A. n = 8

1

1, 1

2

2, 1

2, 2

3

3, 1

3, 2

3, 3

4

4, 1

4, 2

4, 3

4, 4

B. T(n) = 1 + n/2 + ((1 + n/2)(n/2))/2

T(n) = 1 + n/2 + (((n/2 + (n^2)/4))/2)(1/2)

T(n) = 1 + n/2 + n/4 + (n^2)/8

T(n) = 1 + (4n + 2n + (n^2))/8

**T(n)** **= 1 + (6n + (n^2))/8**

C. G = theta(n^2)

1. A. 9, 9

9, 6

9, 3

9, 0

3, 9

3, 6

3, 3

3, 0

1, 9

1, 6

1, 3

1, 0

**K = 35**

B. 1708

C. nlogn

1. A. 6

B. 18

C. n

D. 3n

E. 10

1. A. theta(n)

B. theta(n^2)

1. Theta(1)