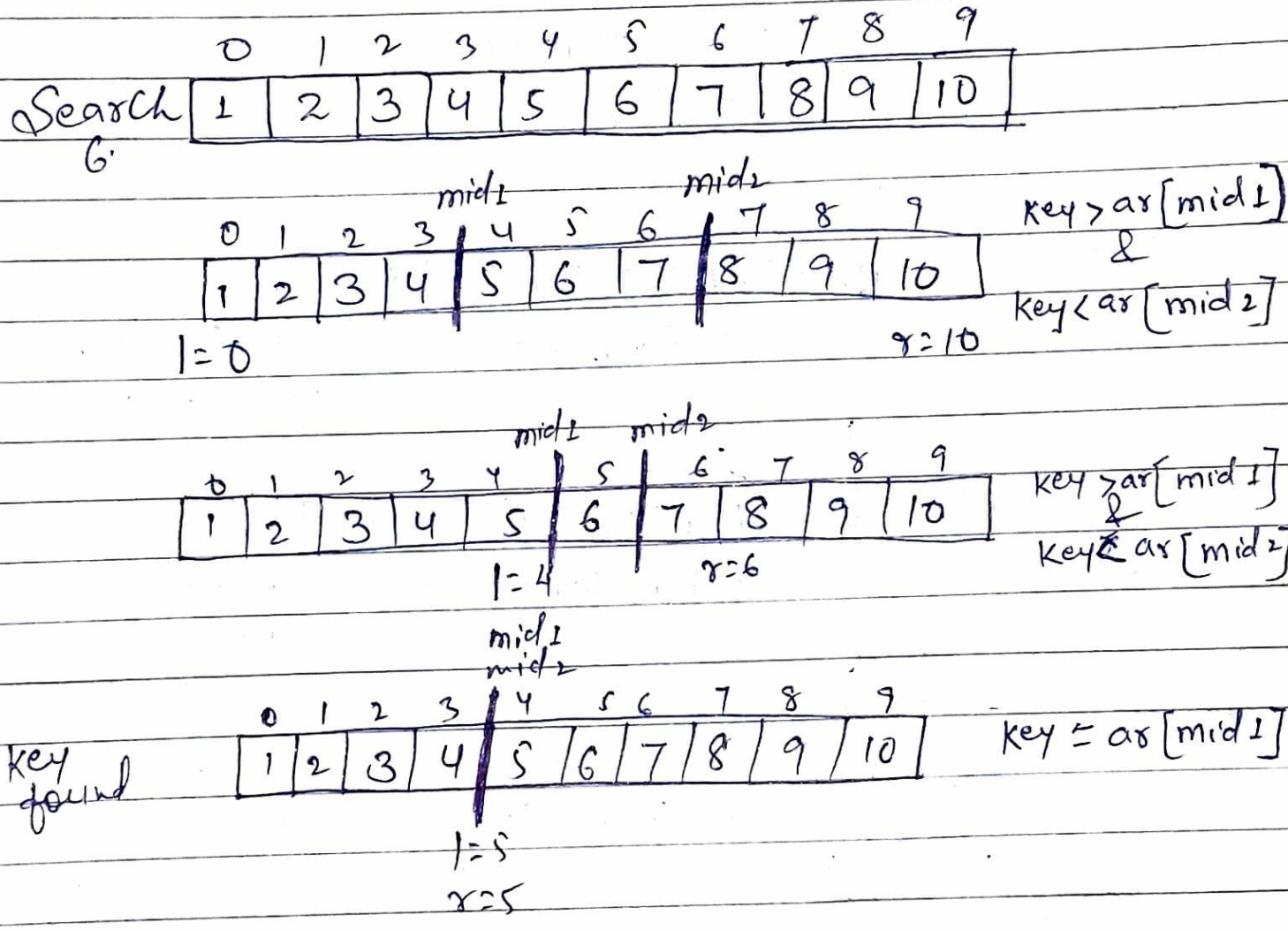
28/12/2020

8. Write logic for Ternary search?

⇒ Ternary Search.

$mid1 = l + (r-l)/3$

$mid2 = r - (r-l)/3$



⇒ Time Complexity : $O(\log_3 n)$

Program

```
# include <stdio.h>
int ternarySearch( int l, int r, int key, ar[])
{
    if (r >= 1) {
        int mid1 = l + (r - l)/3;
        int mid2 = r - (r - l) /3;
        if (ar[mid1] == key) {
            return mid1;
        }
        if (ar[mid2] == key) {
            return mid2;
        }

        if (key < ar[mid1]) {
            return ternary search(l, mid1 - 1,
                                  key, ar);
        }
        else if (key > ar[mid2]) {
            return ternary search (mid2 + l, r,
                                   key, ar)
        }
        else {
            return ternarySearch
        }
    }
    return -1;
}
```