

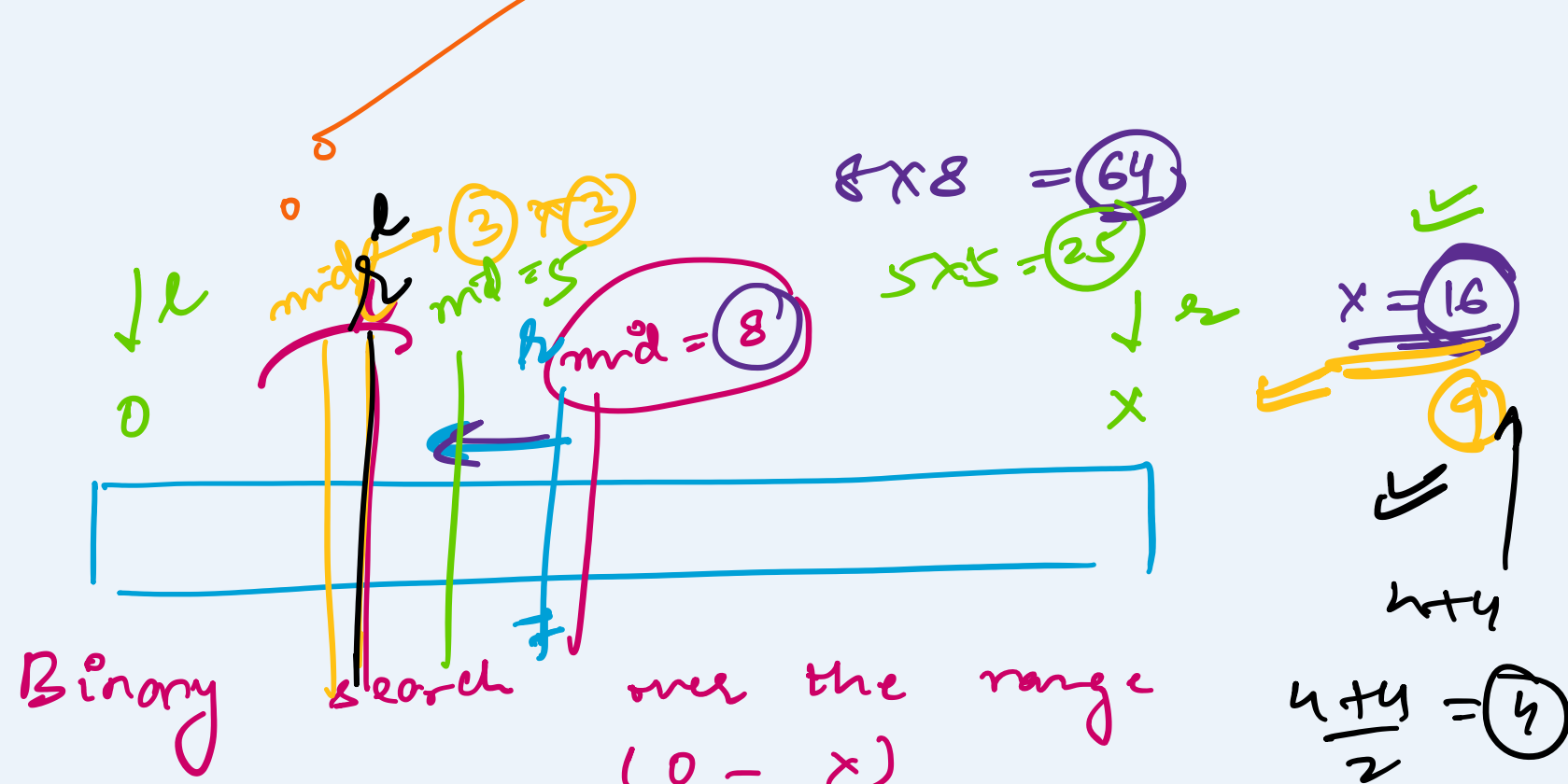
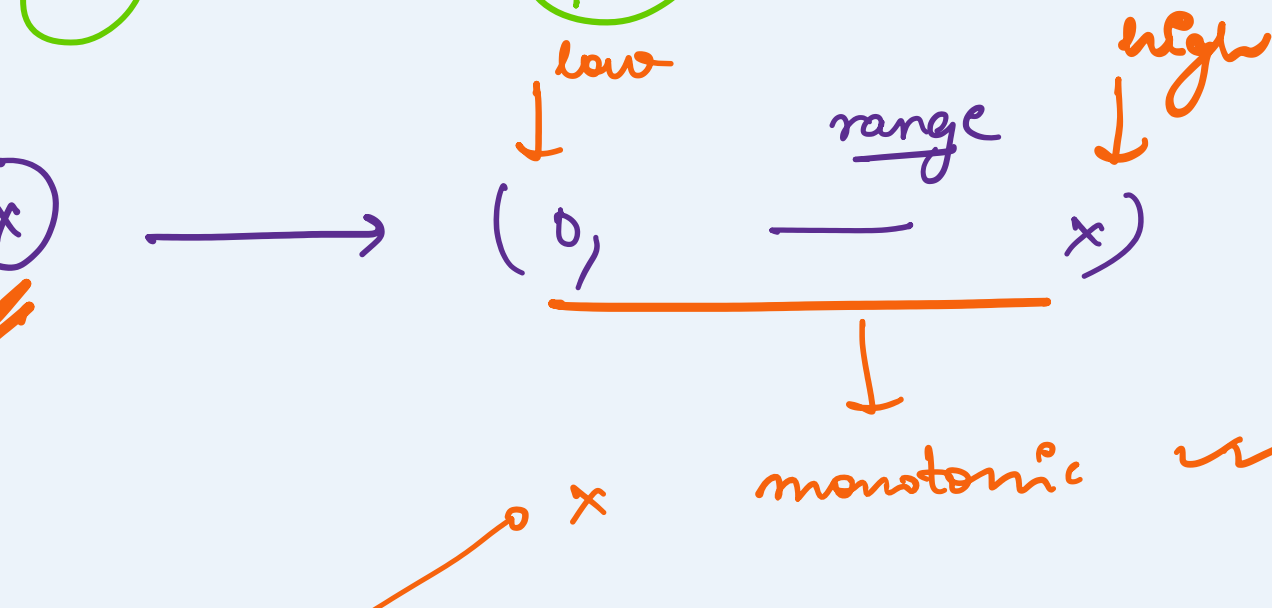
Q Given a value x , tell if x is a square of a integer or not.

16 \rightarrow true $4^2 = 16$
20 \rightarrow false

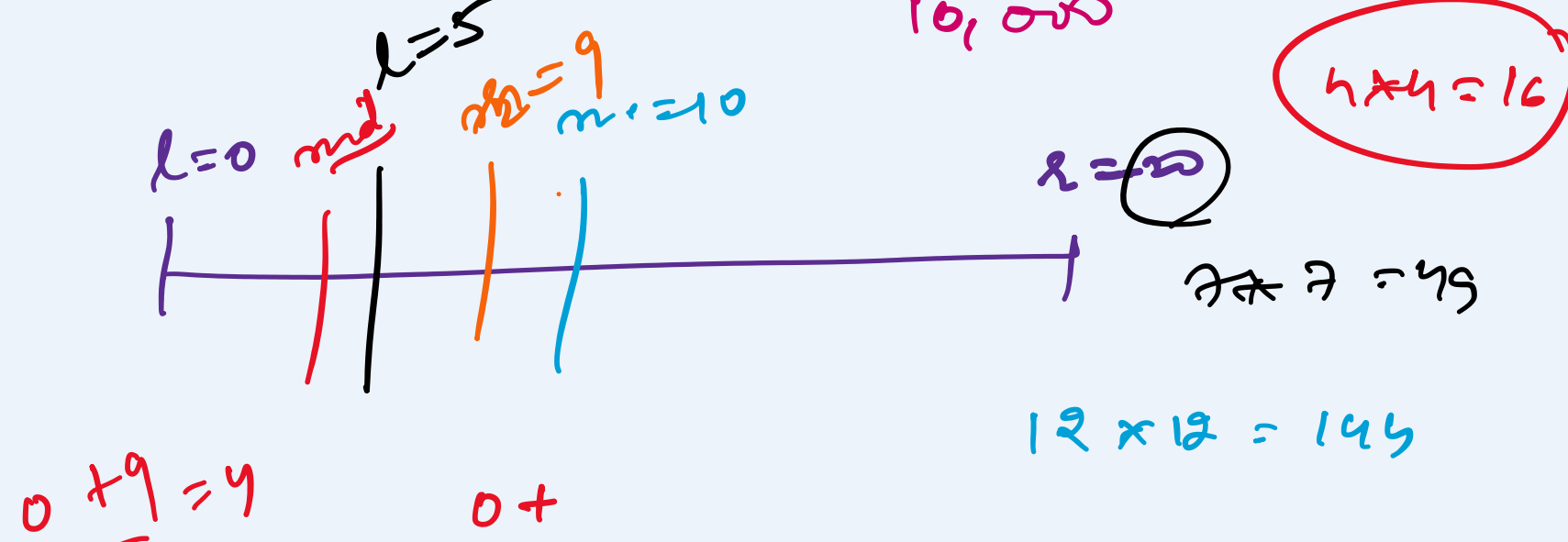
$x \rightarrow (\text{int})^2$

- Find the sqrt of x
- check if that no. is integer or not.

ans $\rightarrow (0 \rightarrow x)$



- low = 4, high = 16, mid = 10, $\frac{4+16}{2} = 10$
- mid = $\frac{0+16}{2} = 8$, $\frac{0+16}{2} = 8$
- mid \rightarrow good or not



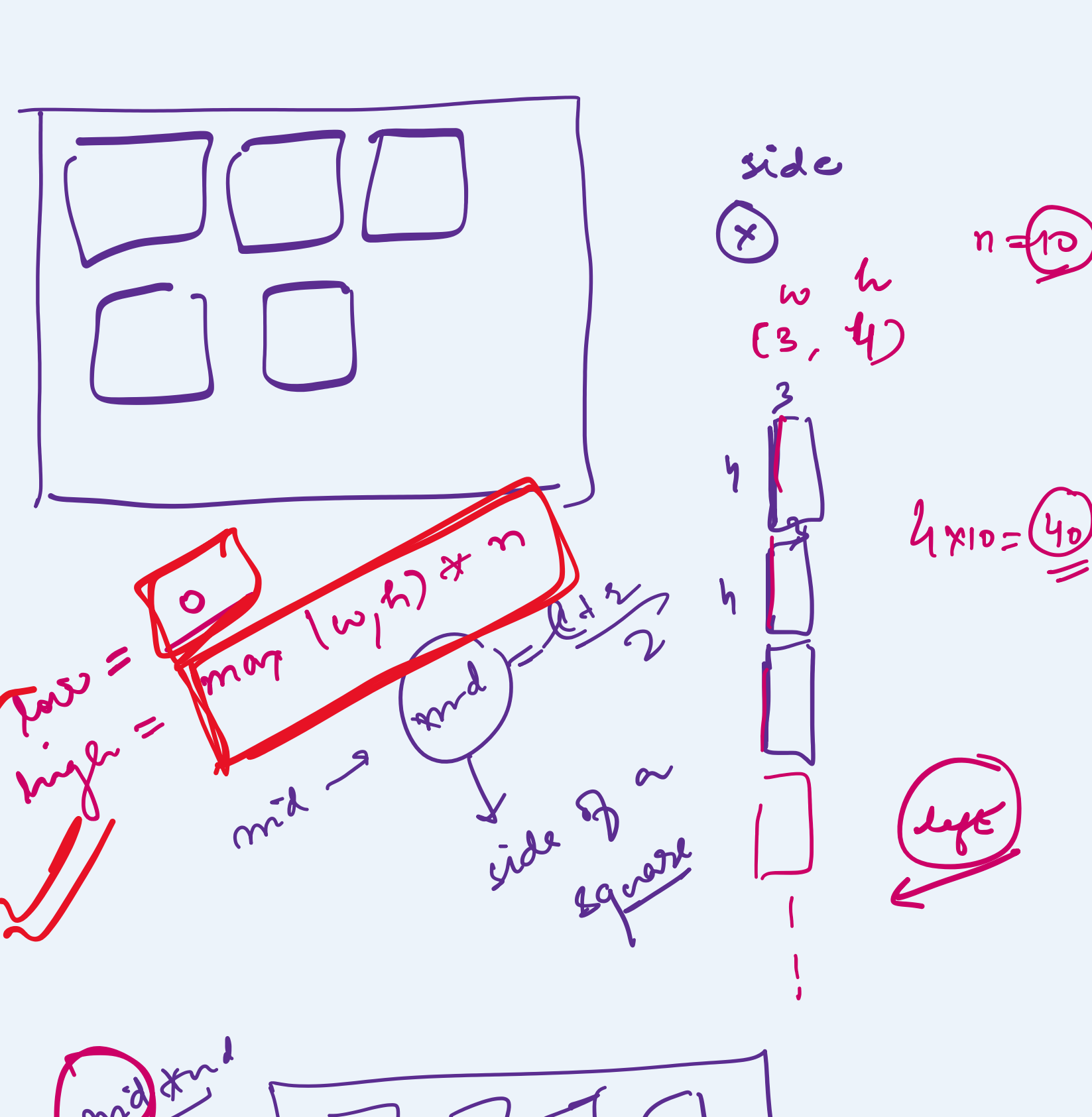
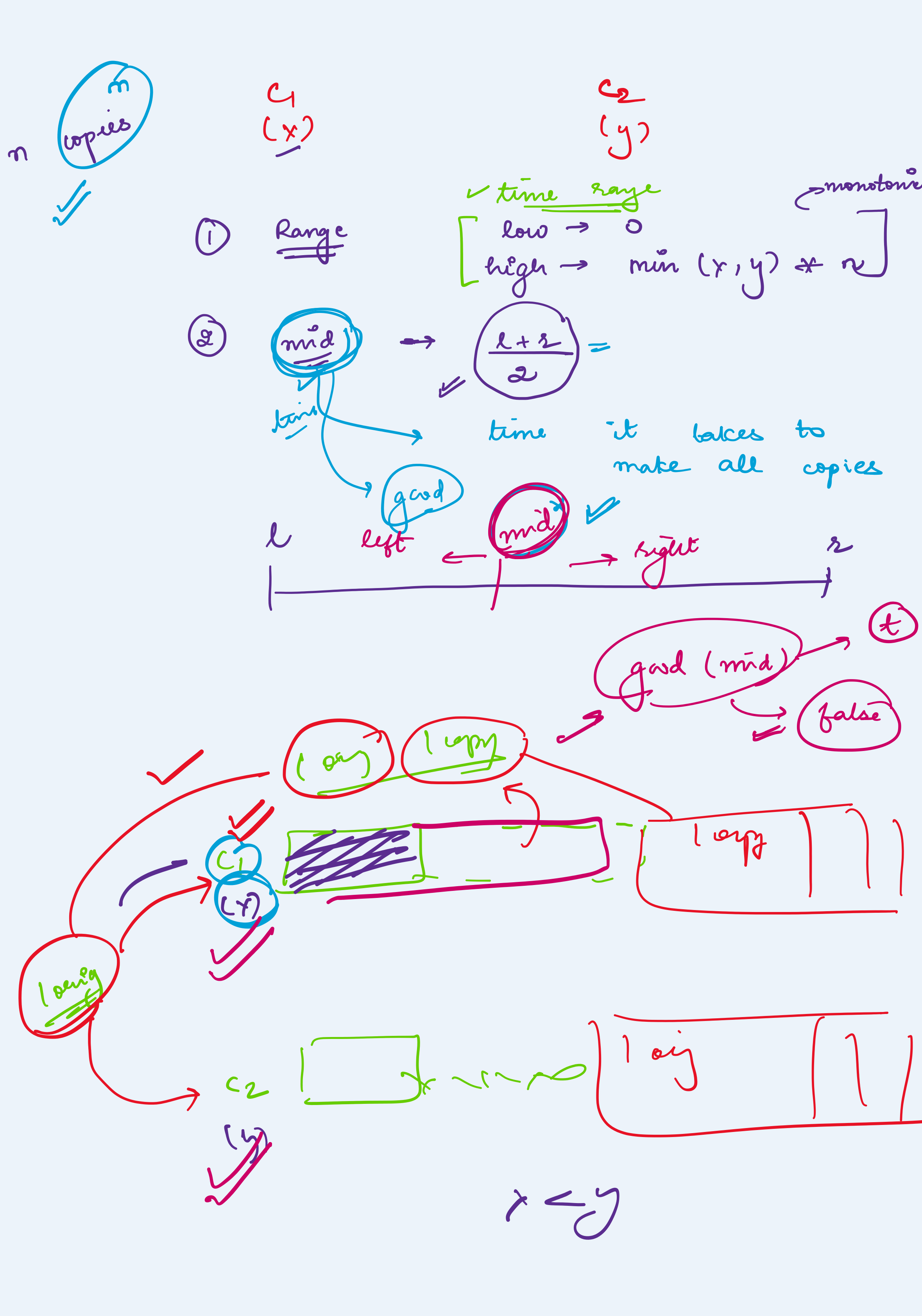
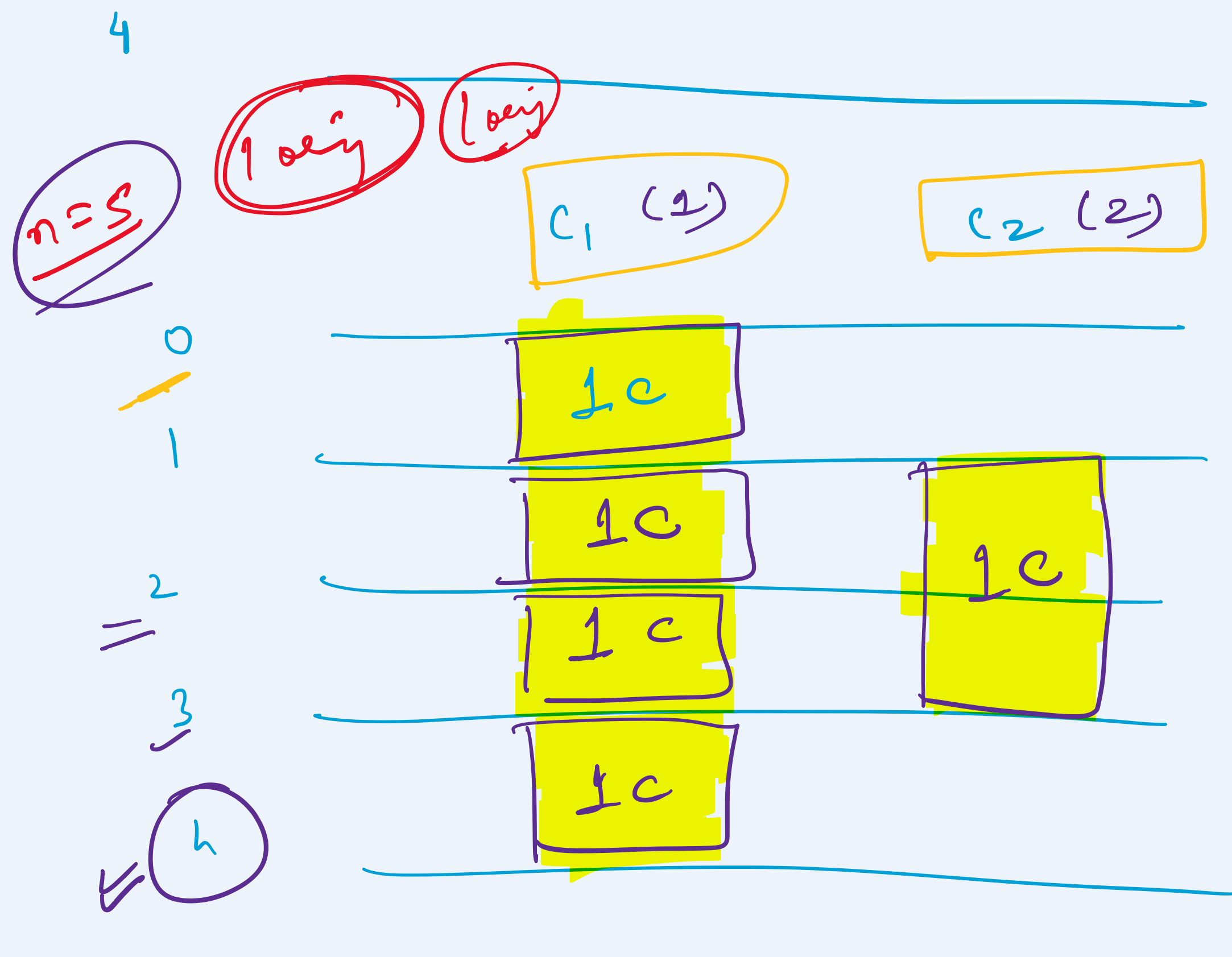
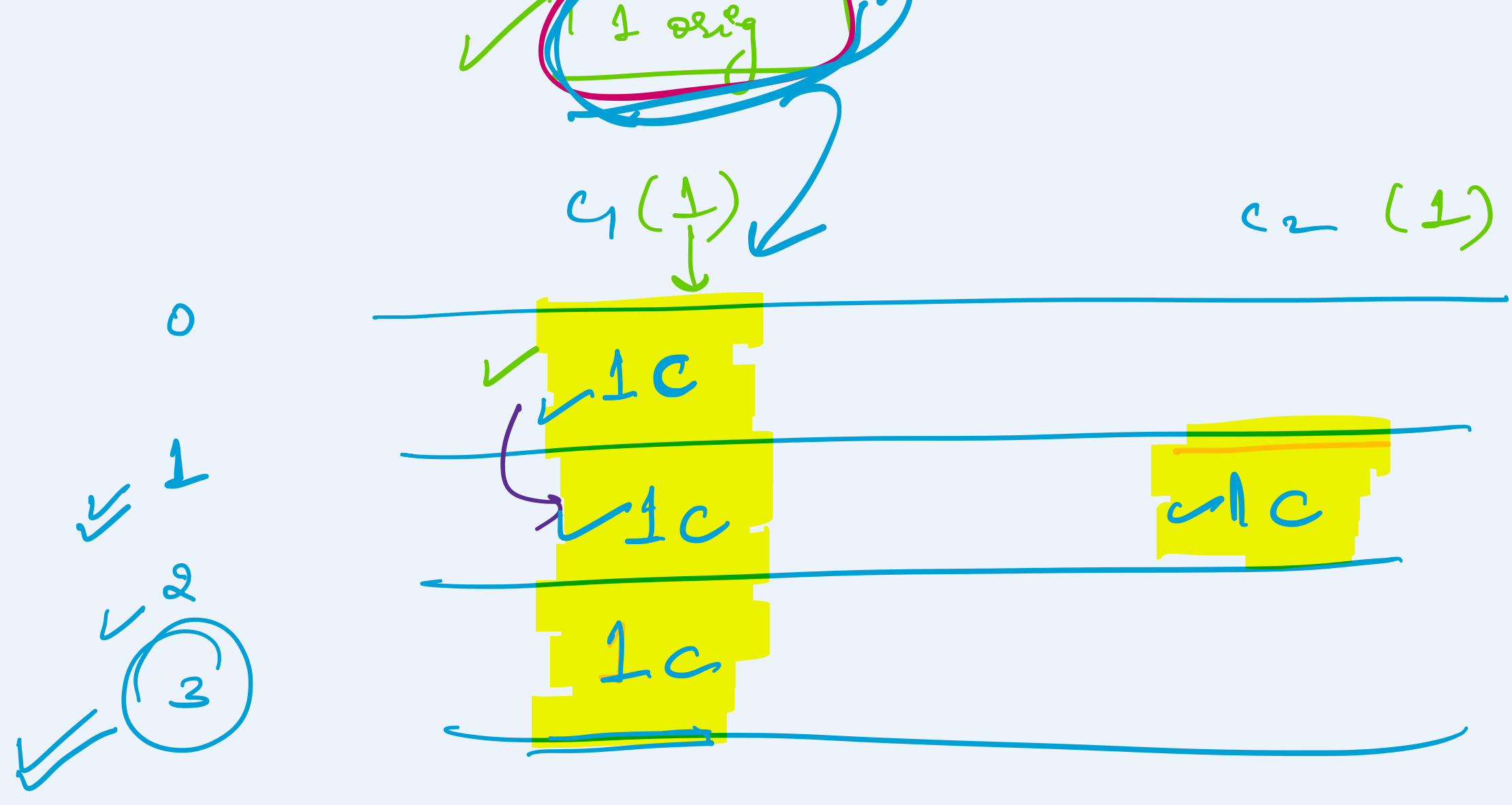
- low = 5, high = 9, mid = 7, $\frac{5+9}{2} = 7$
- mid = $\frac{5+9}{2} = 7$, $\frac{5+9}{2} = 7$
- mid \rightarrow good or not

low = 0, high = x, while (low <= high) {

mid = $\frac{low + high}{2}$
if (mid * mid == x) return true;
else if (mid * mid > x) high = mid - 1;
else low = mid + 1;

} return false;

Q n more copies



if (good(mid)) {
t = t - 1; // smaller value of left mid
f = f + 1; // increase the square of side
}