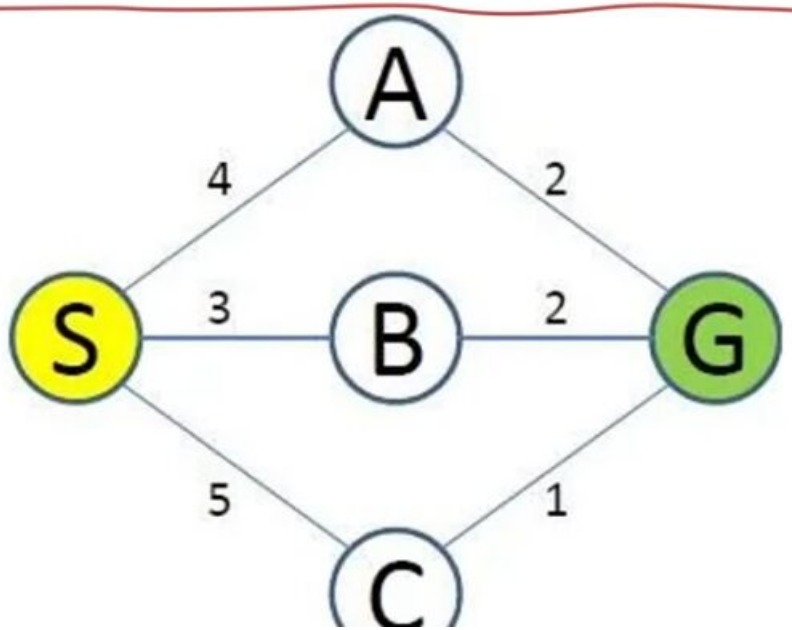
A* Search



Simplified

Memory

Bounded

Solved Example

Artificial Intelligence

Simplified Memory Bounded – A* Search Algorithm

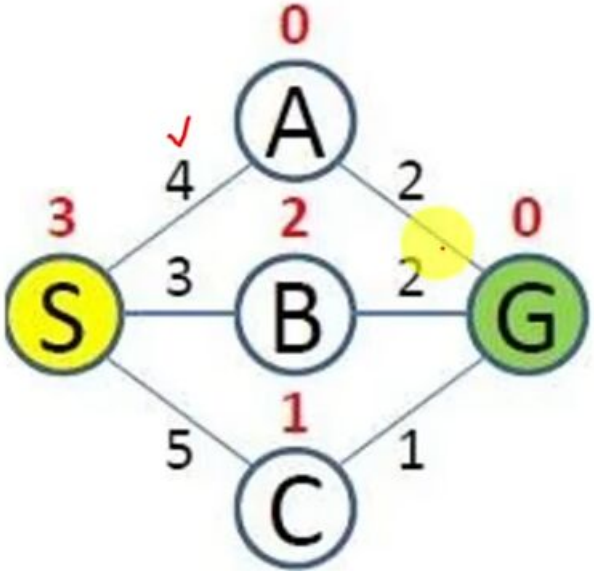
- **SMA*** (**Simplified Memory Bounded A***) is a shortest path algorithm that is based on the A* algorithm.
- The difference between SMA* and A* is that SMA* uses a bounded memory, while the A* algorithm might need exponential memory.

Simplified Memory Bounded – A* Search Algorithm

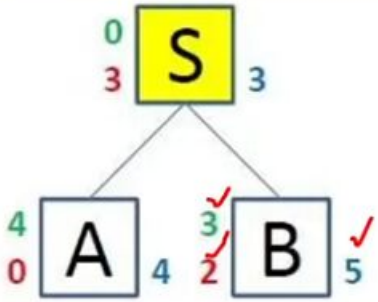
- Like A*, SMA*, use the following formula to calculate the node cost:

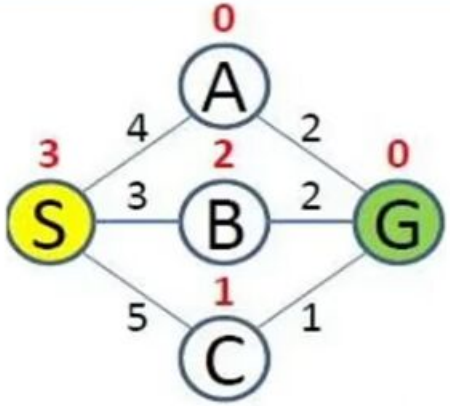
$$f(n) = g(n) + h(n)$$

- where,
- g(n), the cost to reach the node, and
- h(n), the cost to get from the node to the goal



Simplified Memory Bounded – A* Search Algorithm

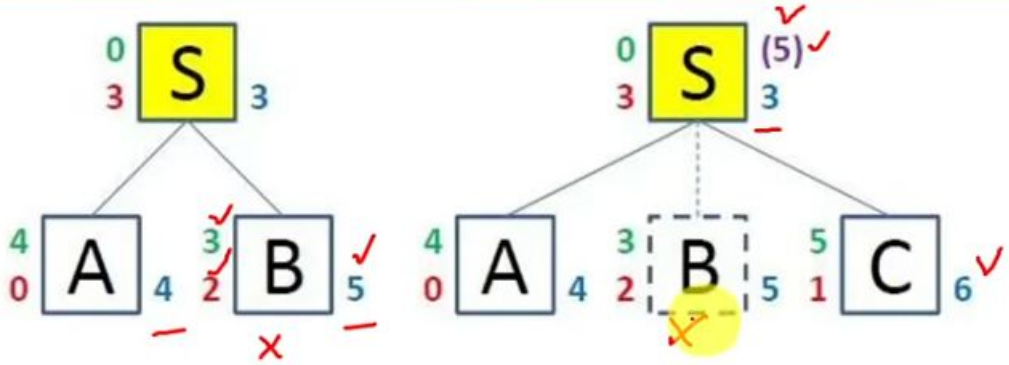


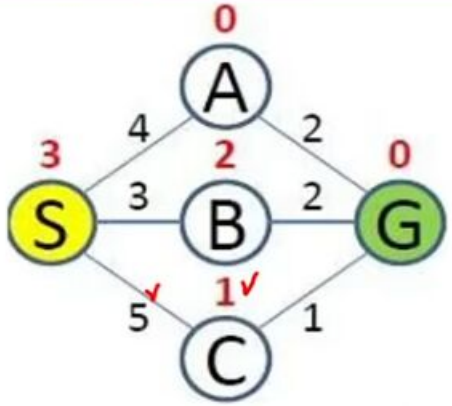


Memory Size 3

$$f(n) = g(n) + h(n)$$

Simplified Memory Bounded – A* Search Algorithm

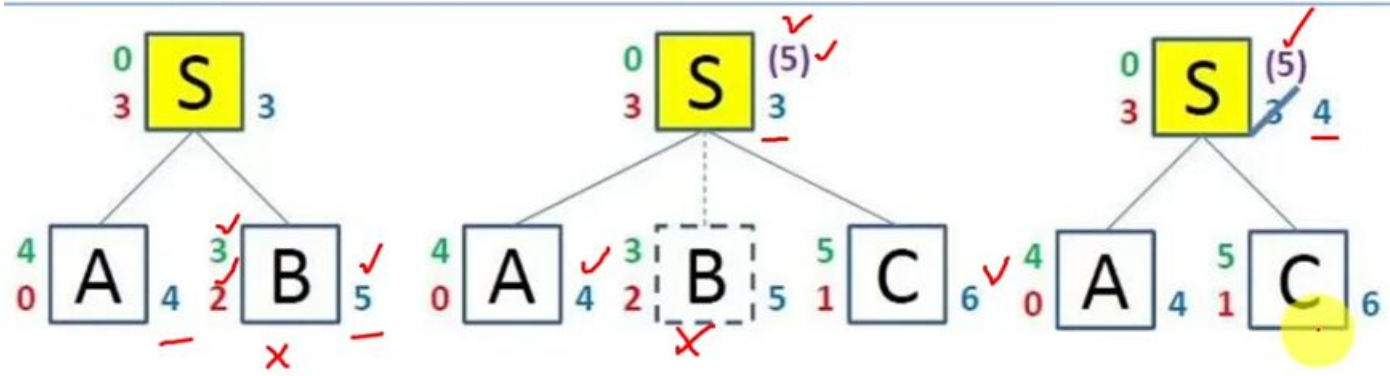


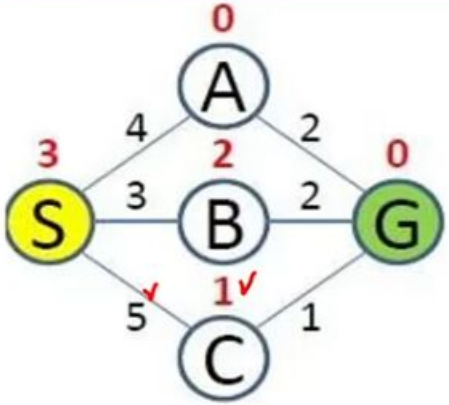


Memory Size 3

$$f(n) = g(n) + h(n)$$

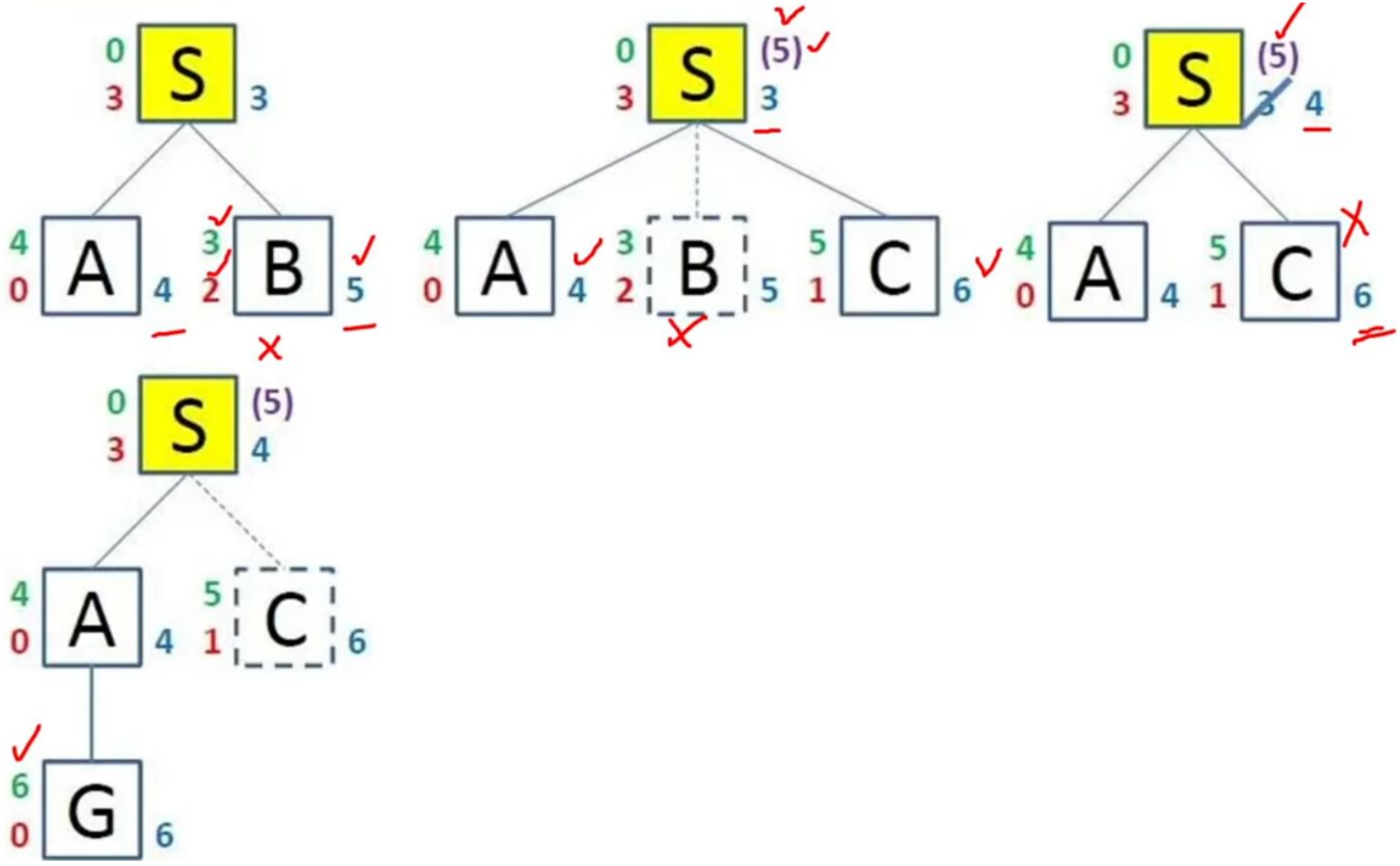
Simplified Memory Bounded – A* Search Algorithm

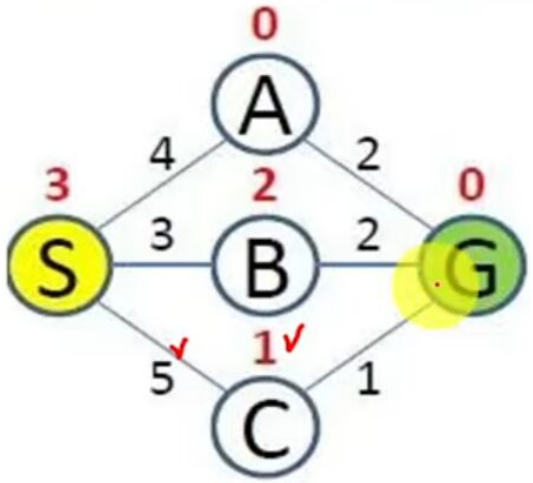




Memory Size 3

$$f(n) = g(n) + h(n)$$

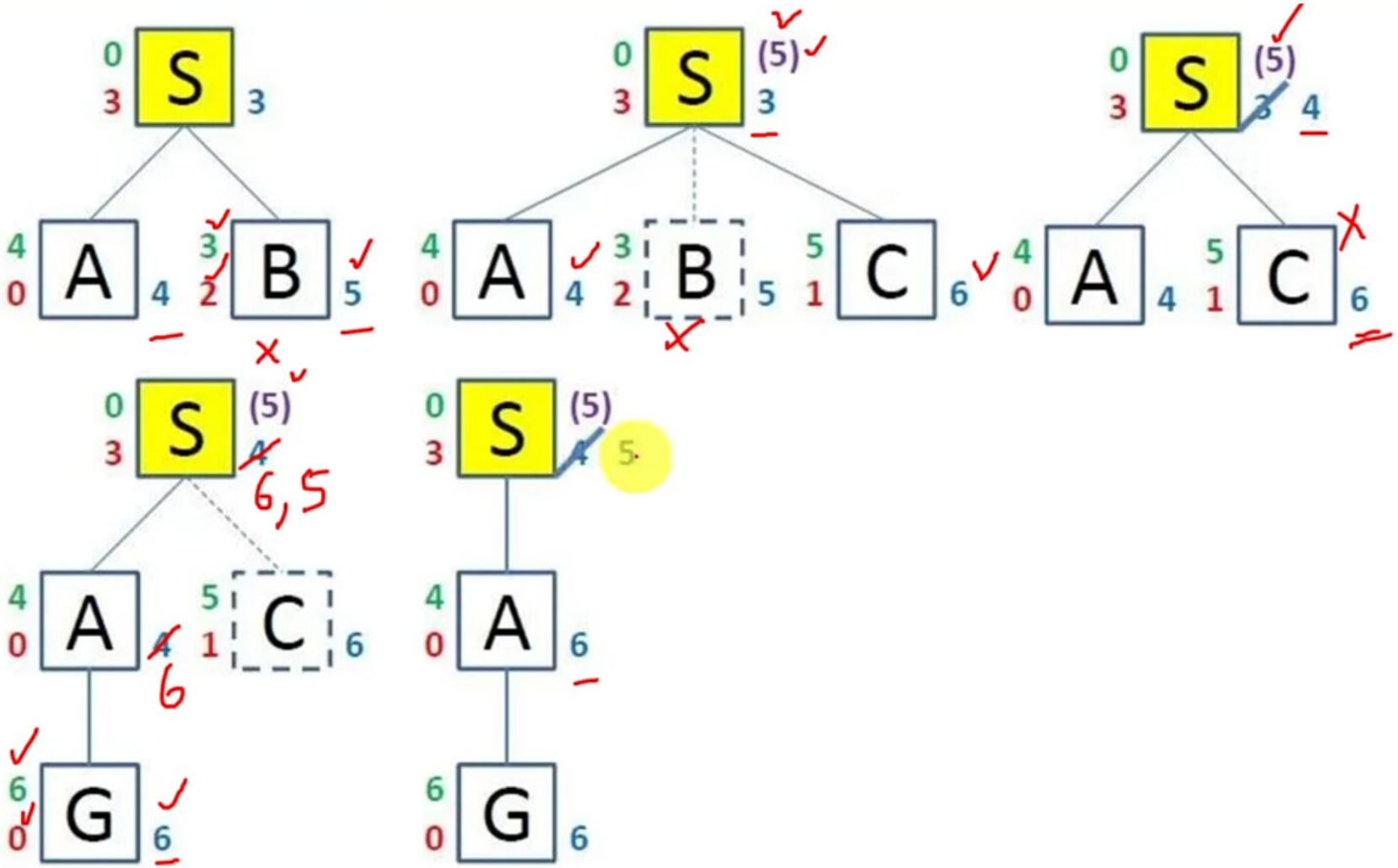


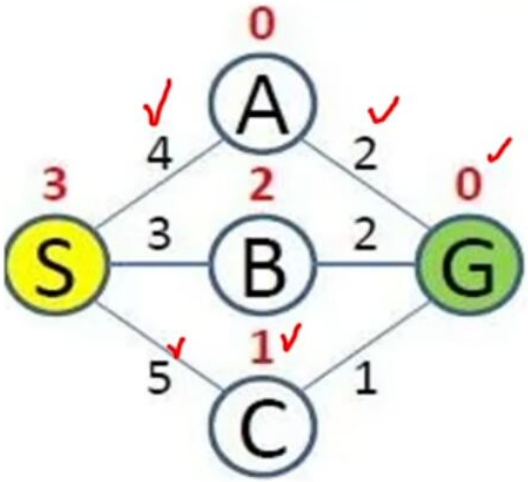


Memory

Size 3

$$f(n) = g(n) + h(n)$$



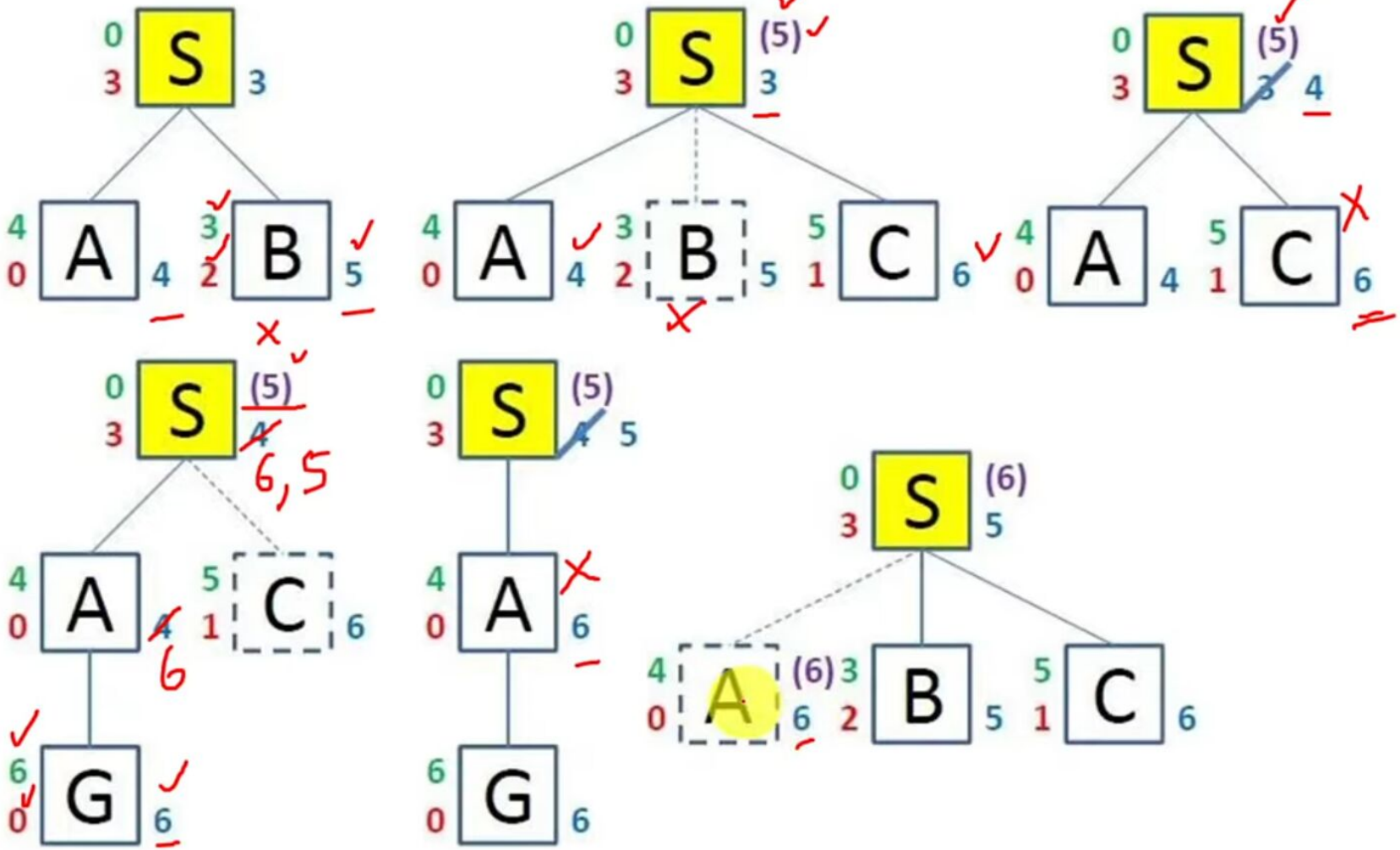


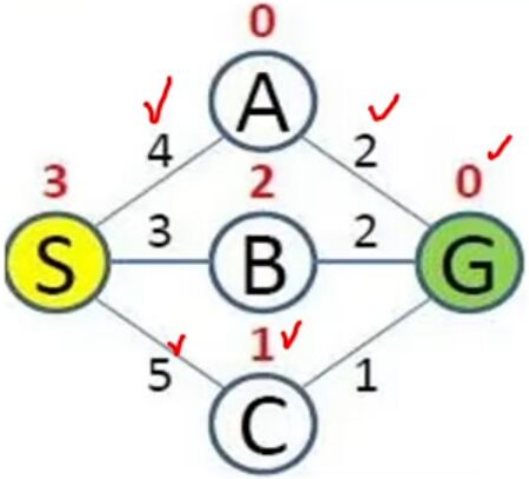
Memory

Size 3

$$f(n) = g(n) + h(n)$$

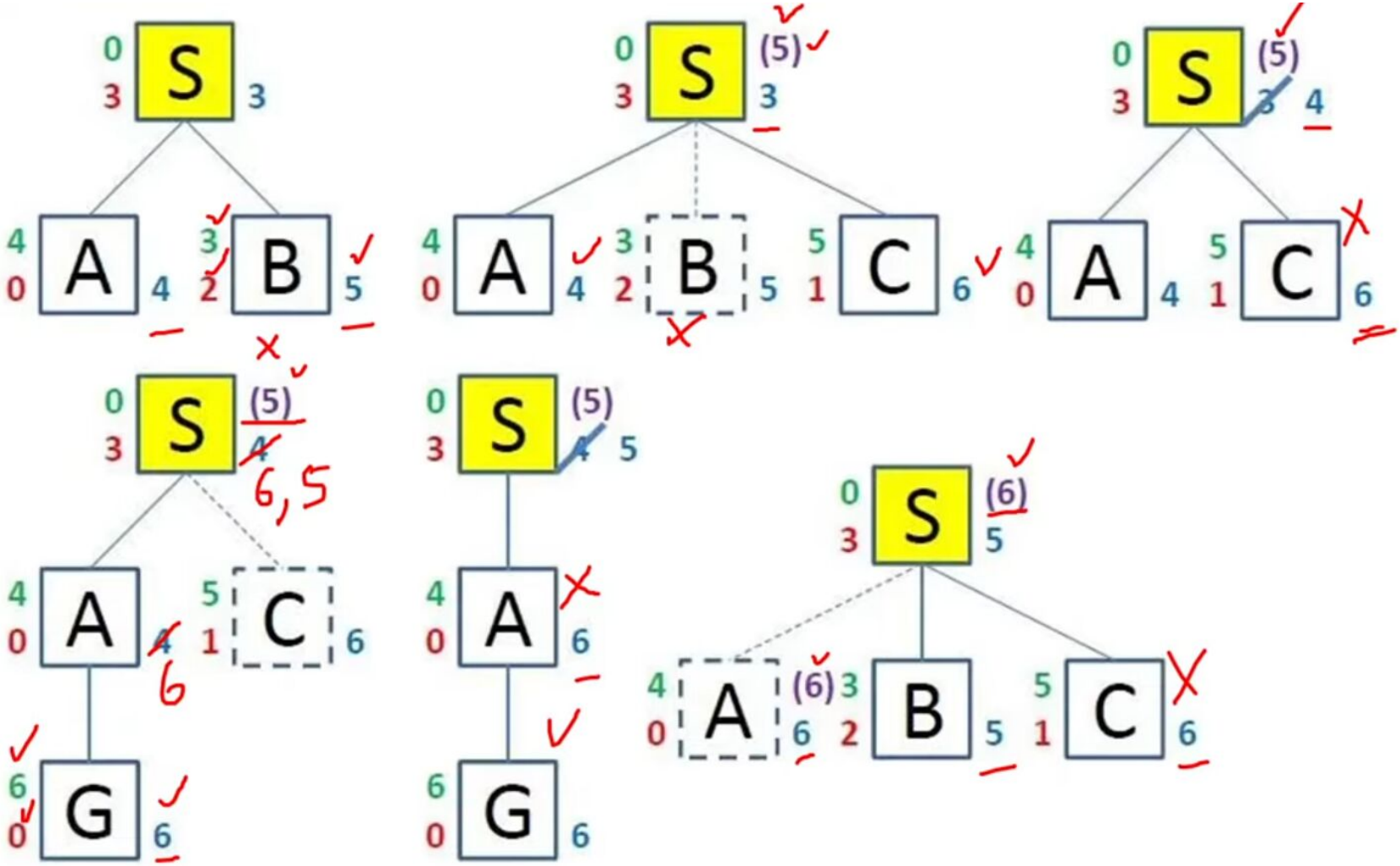
Simplified Memory Bounded – A* Search Algorithm

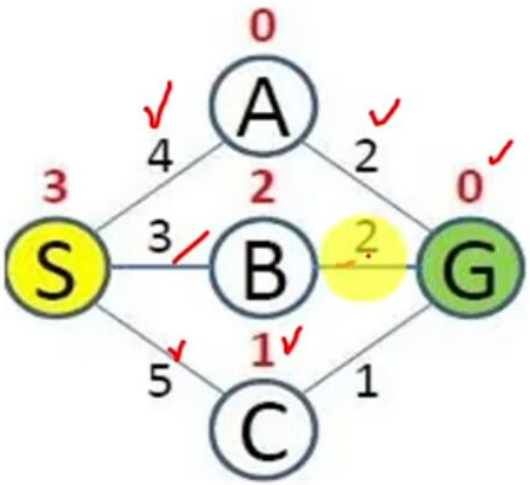




Memory Size 3

$$f(n) = g(n) + h(n)$$

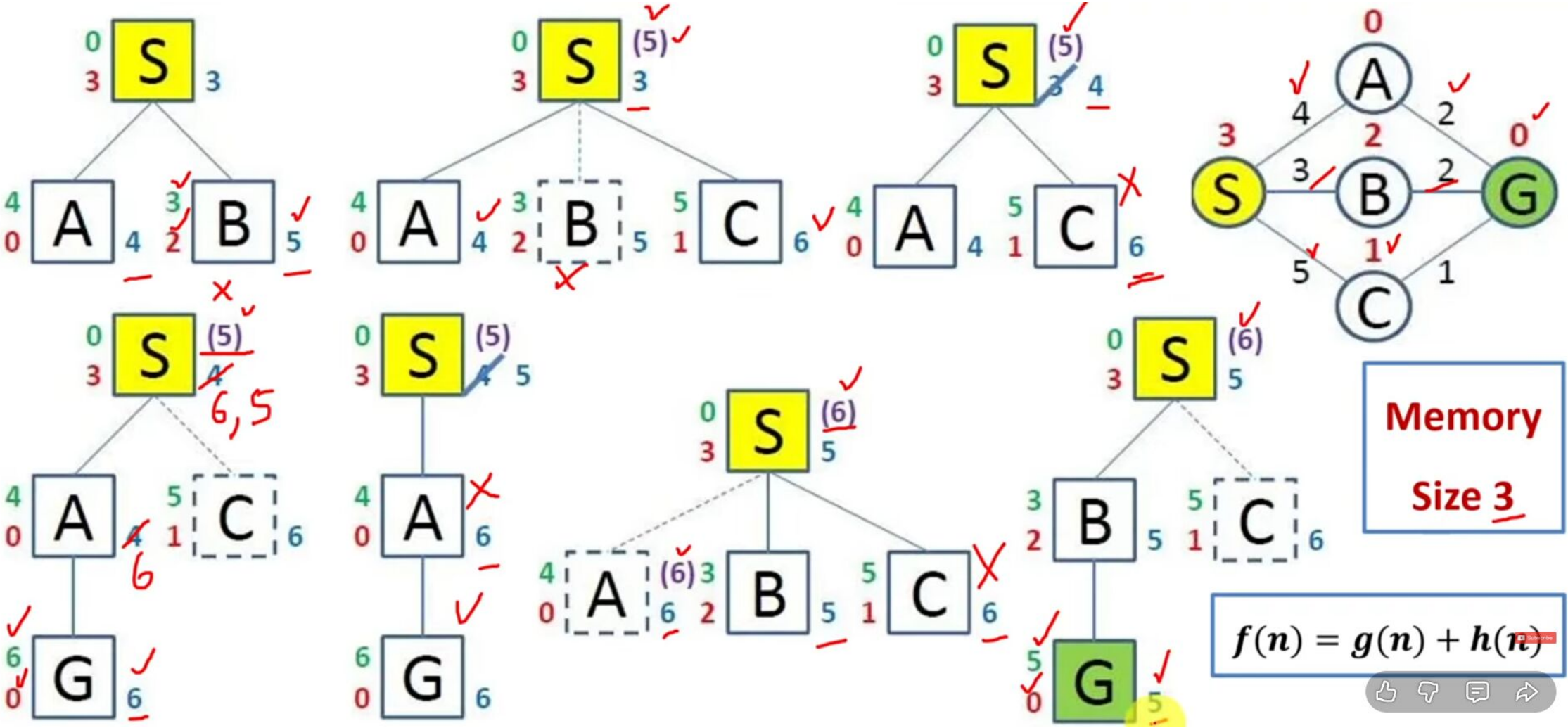




Memory

Size 3

$$f(n) = g(n) + h(n)$$


S
A
B
C
G
Memory
Size 3
$f(n) = g(n) + h(n)$