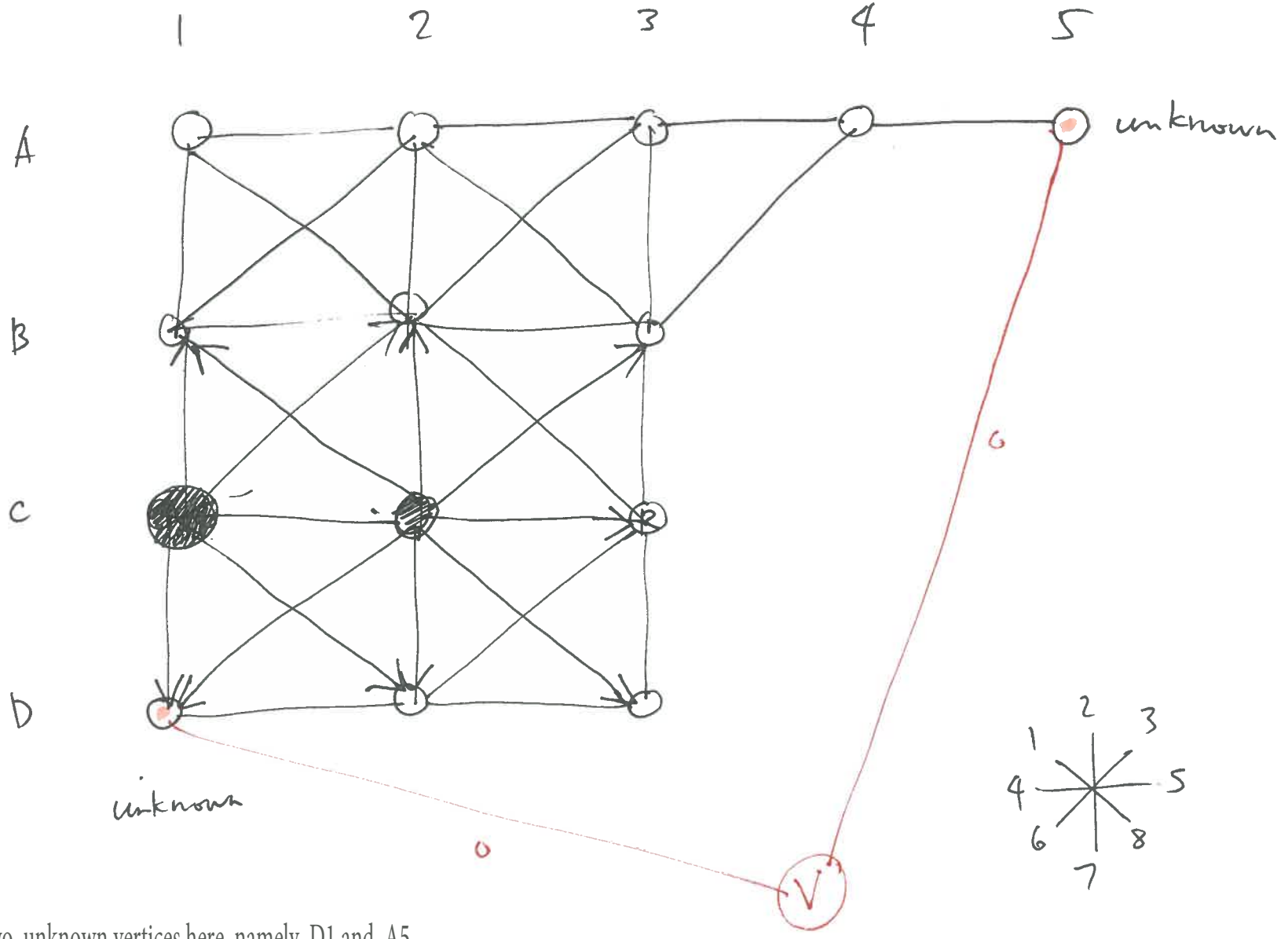
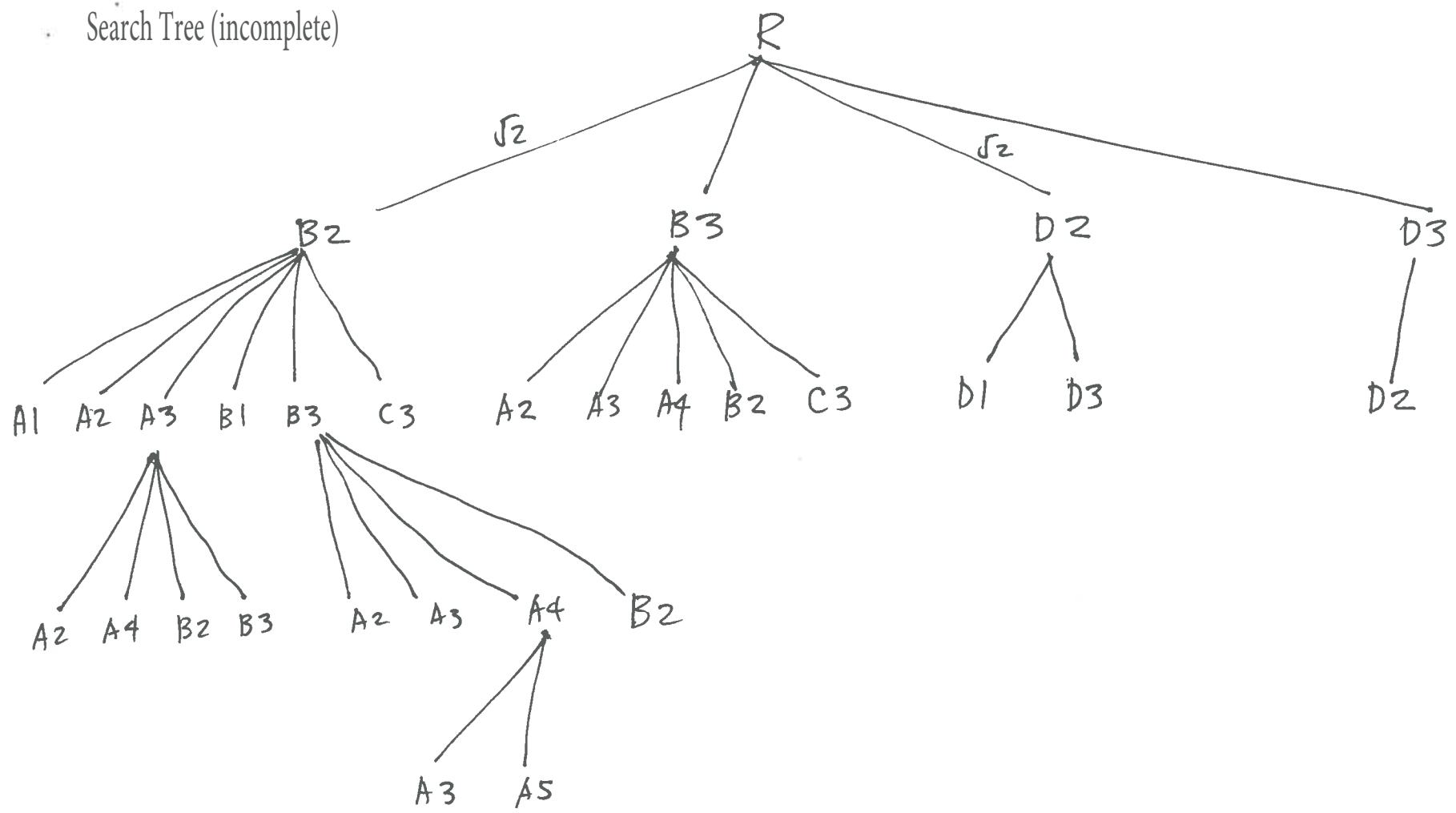
Greedy Mapping ✓



There are two unknown vertices here, namely, D1 and A5.

Search Tree (incomplete)



Greedy Mapping

Step	Deq	Enq	Exp List
0		~~(2R)~~	
1	(2R)	(3.41 B2, R) (3 B3, R) ~~(2.41 D2, R)~~ (3 D3, R)	R
2	(2.41 D2, R)	~~(2.41 D1, D2, R)~~ ~~(4.41 D3, D2, R)~~ (3.41 B2, R) (3 B3, R) (3 D3, R)	D2
3	(2.41 D1, D2, R)	~~(2.41 V, D1, D2, R)~~ (3.41 B2, R) (3 B3, R) (3 D3, R)	D1
4	(2.41 V, D1, D2, R)		

Note: D1 is a target unknown vertex.
The robot follows the path R → D2 → D1, but stops at D2 after observing D1.

Consequently, A* restarts to find the path to another remaining unobserved vertex.

Mapping could be done more efficiently using D*Lite in lieu of A*.

$f(R) = \min(h(R, D1), h(R, A5)) = \min(2, 2) = 2$

$h(B2) = \min(h(B2, D1), h(B2, A5)) = \min(2, 3) = 2$

$f(B2, R) = \sqrt{2} + 2 = 3.41$

$h(B3) = \min(h(B3, D1), h(B3, A5)) = \min(2, 2) = 2$

$f(B3, R) = 1 + 2 = 3$

$h(D2) = \min(h(D2, D1), h(D2, A5)) = \min(1, 3) = 1$

$f(D2, R) = \sqrt{2} + 1 = 2.41$

$h(D3) = \min(h(D3, D1), h(D3, A5)) = \min(2, 2) = 2$

$f(D3, R) = 1 + 2 = 3$

$h(D1) = \min(h(D1, D1), h(D1, A5)) = \min(\emptyset, 4) = \emptyset$

$f(D1, D2, R) = \sqrt{2} + 1 = 2.41$

$h(D3) = \min(h(D3, D1), h(D3, A5) = \min(2, 3) = 2$

$f(D3, D2, R) = \sqrt{2} + 1 + 2 = 4.41$

$$f(V, D1, D2, R) = \sqrt{2} + 1 + 0 = 2.41$$