

Problem 1

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Problem 2

(a) T ✓

(b) F ✓

(c) ~~#F~~ F ✓

(d) F ✓

(e) F ✓

(f) F X

(g) F X

(h) F ✓

(i) T X

(j) F ✓

(k) ~~#~~ T ✓

(l) T X

(m) F ✓

(n) T ✓

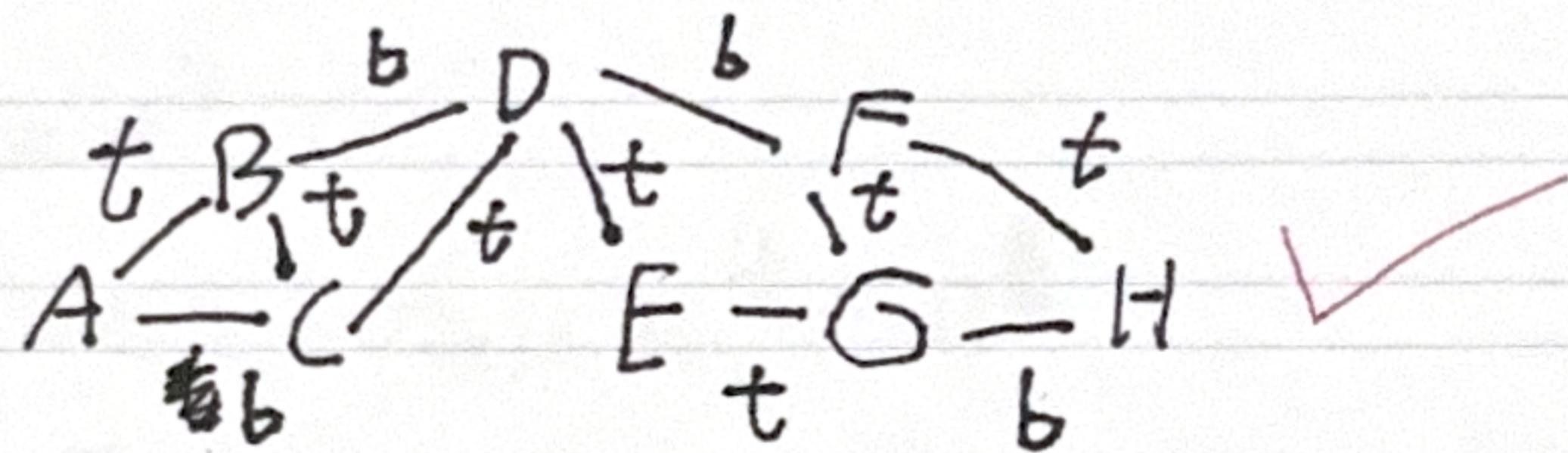
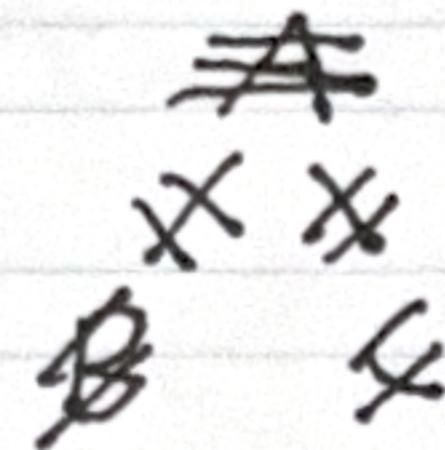
$$\frac{102}{120} = 85\%$$

## Problem 3

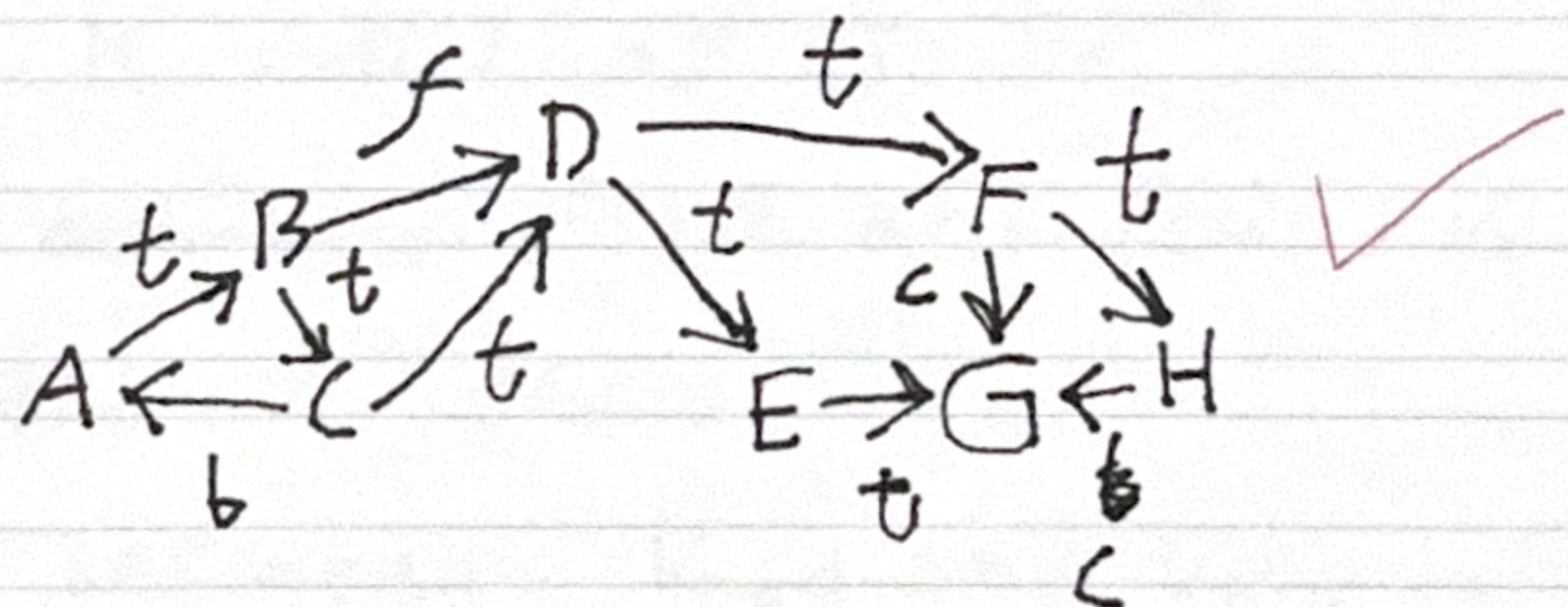
(a) A-B-D-F-H ✓  
-F

(b) A-B-C-D-E-G-H ✓

(c)



(d)

(e) ~~ABCDGFEGH~~ A B D C F E G H ✓

## Problem 4

(a)  $n_{i+1} = n_i - \frac{x_i^4 - A}{43n_i^{1/3}}$  ✓

(b)

$$C = (A^{1/4} - \alpha) (A^{1/4} - \alpha) (A^{1/4} - \alpha) \quad \checkmark$$

(c) We do  $C^4 \approx A^3$  ✓

(d)  $\alpha = 5$

(e)  $B = A^3$  ✓

Newton:  $f(a) = n^4 - B^4$

## Problem 5

make  $K$  copies of  $G$  ✓

connect ~~each layer~~ first and second  $V_0$

2nd & 3rd  $V_1$  etc...

find  $P$  between  $V_{0+1}$  and  $V_{K+1}$

## Problem 6

(a)  $S - u_1 - u_3 - u_2 - t \quad \checkmark \quad 2-\$$

(b)  $S - u_1 - u_3 - u_2 - t - u_5 \quad 21 \$$

(c) We use implicit rep.

At each  $GAS$  we BFS up to level 2

copy the induced sub graph of the  
visited nodes and join at  $GAS$ .

then run Dijkstra.

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