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Introduction to Algorithm Analysis

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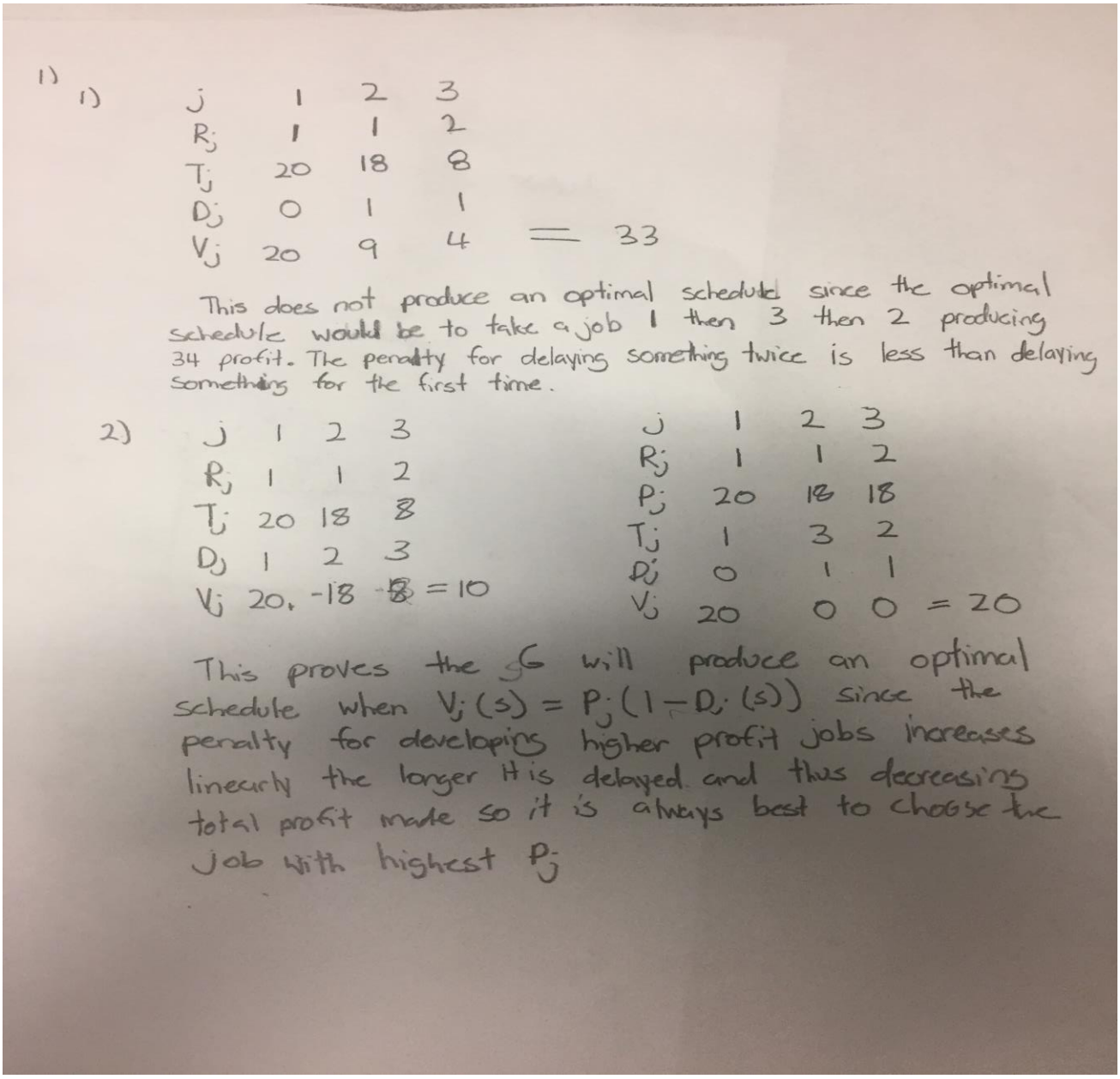
1.)



1) 1)

j	1	2	3	
R_j	1	1	2	
T_j	20	18	8	
D_j	0	1	1	
V_j	20	9	4	= 33

This does not produce an optimal schedule since the optimal schedule would be to take a job 1 then 3 then 2 producing 34 profit. The penalty for delaying something twice is less than delaying something for the first time.

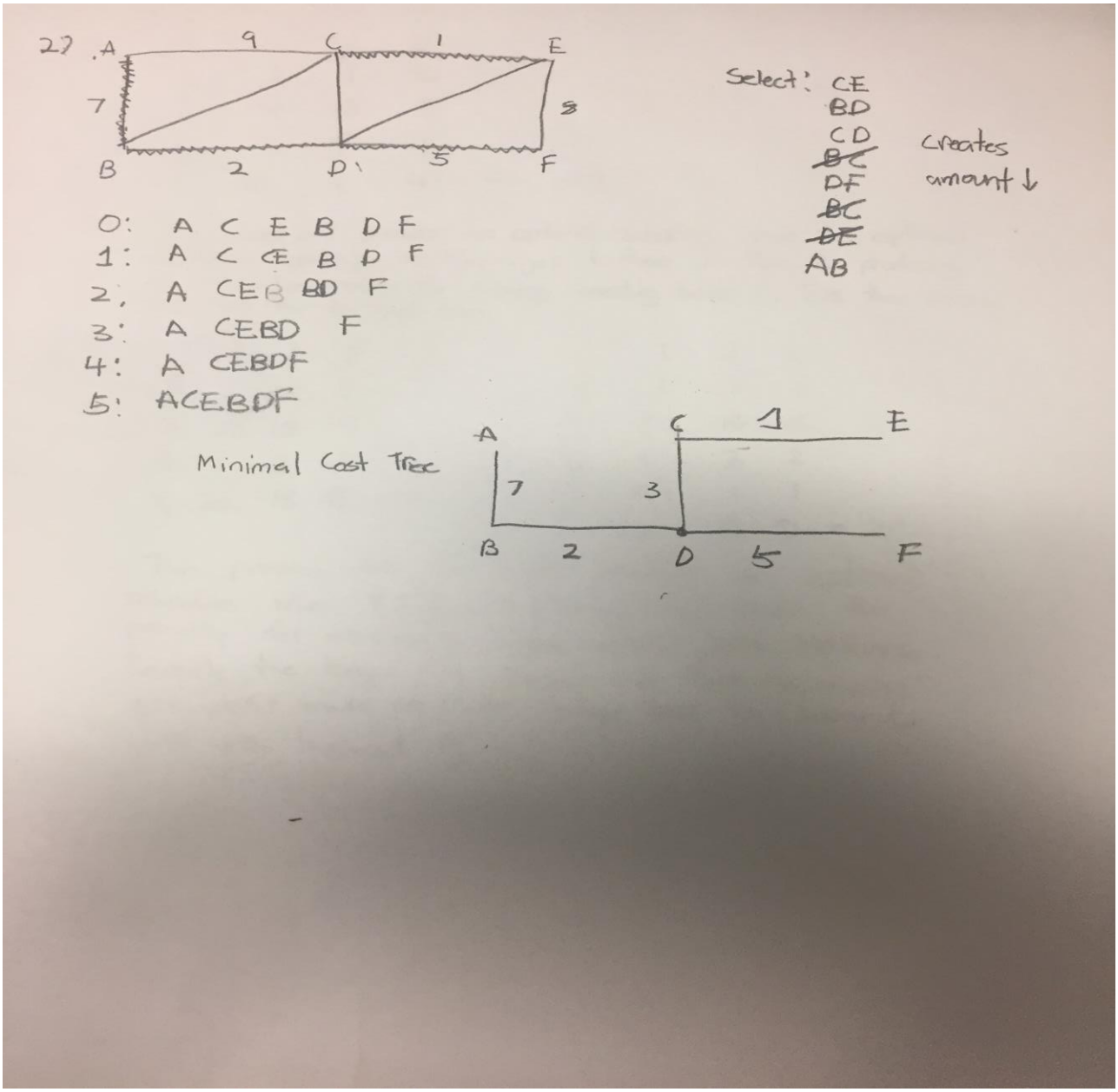
2)

j	1	2	3	
R_j	1	1	2	
T_j	20	18	8	
D_j	1	2	3	
V_j	20	-18	-8	= 10

j	1	2	3	
R_j	1	1	2	
P_j	20	18	18	
T_j	1	3	2	
D_j	0	1	1	
V_j	20	0	0	= 20

This proves the G will produce an optimal schedule when $V_j(s) = P_j(1 - D_j(s))$ since the penalty for developing higher profit jobs increases linearly the longer it is delayed and thus decreasing total profit made so it is always best to choose the job with highest P_j

2.)


2.)
A
9
C
1
E
7
8
B
2
D
5
F
Select: CE
BD
CD
BC
DF
BC
DE
AB
creates
smaller
0: A C E B D F
1: A C E B D F
2: A CE B D F
3: A CEBD F
4: A CEBDF
5: ACEBDF
Minimal Cost Tree
A
C
1
E
7
3
B
2
D
5
F