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CIS315

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Assignment 7

1. x = y = -> x = y =

x \* y =

P1 = A(F-H) 3(5-6)= -3

P2 = (A+B)H (3+2)6= 30

P3 = (C+B)E (4+8)1= 12

P4 = D(G-E) (4+8)1= 64

P5 = (A+D)(E+H) (3+8)(1+6) = 77

P6 = (B-D)(G+H) (2-8)(6+6) = -90

P7 = (A-C)(E+F) (3-4)(1+5) -6

x \* y =

x \* y =

2.a. We need to create a greedy algorithm – You need to sort all the shifts from longest to shortest. Then starting from the longest and mark it as the required shift. Find the largest overlap time and make that the scheduled meeting time. The select the next largest shift that does not have overlap and continue to cover until all shifts have been covered.

b. Another way of dealing with the situation is to take the first shift and look for the longest if comparing is needed. Claim this shift to be the meeting member, then look for the highest overlap time and make that the meeting time. Then continue to look at the first shift after and look for any overlap. Doe the same as above and make it as the previous member selection and decision.

c. Both of these algorithms will work in the same run time. The compares will need to be done on each other more than once. The original will optimize the algorithm, but does require you to first sort by size, then begin the evaluation. The sort will cause an additional run time depending one best efficiency.

d. O(n2)

3. {1}{2}{3}{4}{5}{6}{7}{8}

Unions – (10, 21), (30, 41), (50, 61), (70, 81)

 





4.



A = 01

C = 001

G = 000

T = 1

5. Algorithm – We need to create constraining graphs two graphs- E = {xi = xj } and N { xi xj }. This will include sets of all all elements ‘I’ that contains all elements x1……xn.

For all ‘I’ that are making the set that have a union of E and N for a loop in a greedy algorithm . Then if E=N then not satisfied and if not then it is satisfied as the the output.