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Advanced Algorithms

4.7

1. Find the maximum matching in the following graph. The fat lines are the existing matches.

Max matching (assume you have to use the existing lines): 6

A – None

B – 4

C – 5

D – 2

E – 3

F – 6

G – 7

Max Matching (if you assume you don’t have to use existing relationships): 7

A – 3

B – 1

C – 4

D – 2

E – 7

F – 5

G – 6

Augmented Paths;

There are only 3

S -> +2 B -> +2 G -> +2 ->k ->+2x

S -> + 1A -> +1 F -> -1 D -> +1 G -> +1 j -> +1 x

S-> +1 C -> +1 E -> +1H -> +1 K -> +1x

3.

This is the graph to convert matching to max flow. Set all edges to 0(flow)/1 (capacity).

0/1

0/1

0/1

0/1

0/1

0/1

0/1

0/1

0/1