

In-Class Exercise 3: Depth-First-Search

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Assume that we have run Depth-First-Search (DFS) on a directed graph $G(V, E)$ and obtained the following discovery and finishing times for each vertex in V :

Vertex	d	f
v_1	1	10
v_2	2	3
v_3	4	9
v_4	5	6
v_5	7	8
v_6	11	12
v_7	13	16
v_8	14	15

Assume that we do not know E . For each of the following pairs of vertices, indicate whether the respective edge is (Y), can be (M) or cannot be (N) in E . For those that are or can be in E , also indicate the designation of each edge (T, F, B, or C) according to this run of DFS on G .

Team Nickname: _____

#	Edge	In E ?	Designation
0	v_1v_2	Y	T
1	v_1v_4	M	F
2	v_1v_8	N	–
3	v_2v_1	M	B
4	v_2v_4	N	–
5	v_3v_4	Y	T
6	v_3v_6	N	–
7	v_4v_1	M	B
8	v_4v_5	N	–
9	v_5v_4	M	C
10	v_6v_7	N	–
11	v_7v_6	M	C
12	v_8v_2	M	C