• (a) No. Edge coverage subsumes node coverage. Therefore, any test suite (of any program) that gives full edge coverage will also give full node coverage.

• (b) Let me first note that node coverage does not in general subsume edge coverage. This implies that there are some program and some test set that provides full node coverage (on the program), but the test set does not give full edge coverage. However, on the above program this is actually not possible: any test set that gives full node coverage (on the above program) must also give full edge coverage. Note also that a test-path is required to end in the terminal node.

• (c) \{ [1,2,3,2,4] \} \rightarrow \text{missing pairs [1,2]-[2,4] and [3,2]-[2,3]}

• (d) 2 e.g. \{ [1,2,4] , [1,2,3,2,3,2,4] \}
(a) TR1 requires us to cover all nodes in G, and TR2 all edges. As discussed in No-2, in general they are not equivalent (they do not subsume each other). The above program demonstrates this. E.g. the test set containing a single test path [1,2,3,2,4,5,6,1,7] covers all nodes, but it misses the edge [4,6].

(b) There are 2 pps that start in 1

(c) There are 6 pps that pass 3

(d) there are 15 prime paths.

[1,2,4,6,1] [1,2,4,5,6,1]
[2,3,2] [2,4,6,1,2] [2,4,5,6,1,2]
[3,2,3] [3,2,4,6,1,7] [3,2,4,5,6,1,7] → note red begins in 3, and ends in terminal 7
[4,6,1,2,4] [4,5,6,1,2,4] [4,6,1,2,3] [4,5,6,1,2,3] → note red begins in 4, and ends in non-terminal 3!
[5,6,1,2,4,5]
[6,1,2,4,6] [6,1,2,4,5,6]
– [0,1,0,2] **tours** [0,2] (so, it also tours [0,2] with side trip and detour)

– [0,1,2] does not tour [0,2], not even with side trip.

– [0,1,2] tours [0,2] **with detour**

– [0,1,2,0,1,0,2] does not tour[2,0,2]. However, it does tour [2,0,2] **with side trip** (so, also with detour).