

# MCS-236 Non-textbook Homework Exercise 11

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For the graph  $G$  shown in Figure 10.10 (page 274), what bound on  $\chi(G)$  is provided by each of Theorems 10.7 (page 274), 10.8 (page 275), and 10.9 (page 275)?

Also, show how the algorithm in the proof of Theorem 10.9 would color this graph. Do this by listing the vertices  $L1, L2, \dots, L9$  in the order they are colored by the algorithm and for each one the color number assigned to it. There is more than one order consistent with the algorithm; so as to make your work easier to check, please choose your order in the following way. Whenever the algorithm has several vertices it can legally choose, pick the one with the lowest number.