

**UPDATED GENERAL INFORMATION — FEBRUARY 11, 2008**

Further comments regarding the first examination:

- (1) There was an allusion to Problem M53.6 in the review file, and in response to student questions it seems appropriate to mention that there if  $p : E \rightarrow B$  is a covering space projection then there are also many other properties of topological spaces for which one can ask the question, “If  $B$  has property  $\mathbf{P}$ , then does it follow that  $E$  also has this property?” The answer varies with the property; for example, if  $B$  is compact then  $E$  is not necessarily compact, but if  $B$  is locally connected then so is  $E$ . Other properties along these lines that one can consider are first countability, second countability, the  $\mathbf{T}_1$  property, and having the discrete topology for which every subset is open.