If there is a polynomial time reduction of Problem A to problem B, this means that problem B is at least as hard as problem A.

b) Therefore, if we know that problem A is NP-complete, we know for sure that problem B will also be at least as hard as problem A, therefore, problem B is also NP-complete.

a) However, the converse is not true. Suppose we know that problem B is NP-complete. We could not say anything about problem A because we can always reduce an easy problem, e.g., problem A, to harder problem, e.g, problem B which is NP-complete.