The Theory of Computation
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Solution Manual
Chapter 6, Problem 6.13

If problem A is $\mathscr{C}$-hard, then there exists some problem B complete for $\mathscr{C}$ under the appropriate reduction t that t-reduces to A, $B \leq_t A$. But every problem in $\mathscr{C}$ t-reduces to B, since B is complete; thus, if $\mathscr{C}$ contains any intractable problem, B must be one of them. But then A is intractable—otherwise we could solve B by t-reducing it to A, solving A, and thus obtaining a solution for B.