The Theory of Computation
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Solution Manual
Chapter 3, Problem 3.8

1. Since every finite set is regular, the answer is clearly yes: any non-empty set contains a non-empty finite set, even if that set contains a single item.
2. A language with nonempty complement is simply a language that is not Σ^*. Note that, because regular languages are closed under complementation and because every finite set is regular, every set of the form $\Sigma^* - F$, where F is a finite set, is regular. But every language with nonempty complement is contained within one such set—even if F is made of a single element. Thus the assertion is again proved.