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We will see that the 1959 Kadison-Singer Problem in  $C^*$ -algebras is equivalent to fundamental unsolved problems in a dozen areas of research in both Mathematics and Engineering. This explains why each of these areas has volumes of literature on their respective problems without a satisfactory resolution as well as giving them common ground to interact. We will look at some of the areas of research where KS arises. (Received September 01, 2005)