Solution to #11, section 1.5.

The span of the set  $S = \{x\}$  is simply the set of all linear combinations of the set S, by definition. Since x is the only element of S, and since as we showed in class it suffices to consider linear combinations of distinct elements of S, span(S) is just the set of multiples of x by elements of F. If x is the zero vector, this is just the set  $\{0\}$ . If x is a nonzero vector in  $\mathbb{R}^3$ , then it is the line passing through x and the origin.