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The perplex numbers are an extension of the real numbers in which one attaches a number h whose square is 1, but $h \neq \pm 1$. (That's why the numbers are perplex, rather than complex.) We look at the basic properties of this ring, as well as the interesting phenomenon that a polynomial of degree n has n^2 roots in the perplex numbers. We also will reveal a scheme to assign multiplicities in a way that makes a Fundamental Theorem of Algebra possible. (Received September 17, 2007)