1024-13-11 **D. D. Anderson*** (dan-anderson@uiowa.edu), Department of Mathematics, The University of Iowa, Iowa City, IA 52242, and **Malik Bataineh**, Department of Mathematics, The University of Iowa, Iowa City, IA 52242. *Generalizations of Prime Ideals.*

Let R be a commutative ring with identity. Various generalizations of prime ideals have been studied. For example, a proper ideal I of R is *weakly prime* (resp., *almost prime*) if $a, b \in R$ with $ab \in I - \{0\}$ (resp., $ab \in I - I^2$) implies $a \in I$ or $b \in I$. Let $\phi{:}\mathcal{I}(R) \to \mathcal{I}(R) \cup \{\varnothing\}$ be a function where $\mathcal{I}(R)$ is the set of ideals of R. We call a proper ideal I of R a *ϕ-prime ideal* if $a, b \in R$ with $ab \in I - \phi(I)$ implies $a \in I$ or $b \in I$. So taking $\phi_\varnothing(J) = \varnothing$ (resp., $\phi_0(J) = 0$, $\phi_2(J) = J^2$), a $\phi_\varnothing$-prime ideal (resp., ϕ_0-prime ideal, ϕ_2-prime ideal) is a prime ideal (resp., weakly prime ideal, almost prime ideal). We show that ϕ-prime ideals enjoy analogs of many of the properties of prime ideals. (Received October 26, 2006)