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We compute the spectrum of the corona $G \circ H$ of two graphs, G and H . In particular, we introduce a new invariant, the *coronal* of a graph, and show that the spectrum of $G \circ H$ is completely determined by the spectra of G and H and the coronal of H . We compute the coronals explicitly for several families of graphs, including regular graphs, complete n -partite graphs, and path graphs. Finally, we use the corona construction to generate many infinite families of pairs of cospectral graphs. (Received September 21, 2009)