1038-20-22   **Cecil Andrew Ellard*** (`cellard@ivytech.edu`), Ivy Tech Community College of Indiana, 200 Daniels Way, Bloomington, IN 47404. *E_6, E_7, E_8, and the Finite Simple Group $Sp(6,2)$.* Preliminary report.

We study character values of the Weyl group of the exceptional Lie group E_8 and some of its parabolic subgroups. We give short proofs, involving Dynkin diagrams, that the rationality of $W(E_6)$ implies the rationality of $W(E_7)$ and much of $W(E_8)$. A corollary of this is a short proof that the rationality of $W(E_6)$ implies the rationality of the finite simple group $Sp(6,2)$ of order $1,451,520$. $Sp(6,2)$ is one of only two rational finite non-abelian simple groups, a result proved by Walter Feit and Gary Seitz. The exceptional Lie group E_8 has been of interest in physics (heterotic string theory, for example). (Received December 18, 2007)