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Donna A. Dietz* (dietzd@seas.upenn.edu), Donna Dietz, Levine 572, 3330 Walnut Street, Philadelphia, PA 19104. *Combinatorial Scheduling: a way to motivate matrix multiplication and other important concepts.*

Combinatorial Scheduling (Ronald Graham, 1978) is an underused problem type which can be used to effectively teach a variety of Linear Algebra concepts. Students are encouraged to use matrices to model prerequisite graphs (posets), which leads directly to matrix multiplication as an obvious step in the solution. They also learn how to remove transitivity and loops from matrices (graphs). Scheduling problems can be easily adjusted to nearly every level of student, making them extremely versatile. Simple examples can be done easily by hand (for a Liberal Arts course), but more complex situations are also well-suited for programming exercises (particularly with MATLAB) for advanced students. (Received August 17, 2011)