At Sacred Heart University, all mathematics majors participate in a Senior Seminar course their final year, in which they conduct a guided independent study on a topic of their choosing. This capstone experience culminates in a 30 minute presentation and 12-15 page paper. This semester I am supervising a student doing a "History of Discrete Mathematics" project. After reading through a few different options over the summer, the student chose Barnett's project on Boolean Algebra (#4a) as the foundation for her seminar project. She worked through the majority of the problems in the project, specifically focusing on Boole and Venn's work. In addition, she went back to some of the original sources (Boole's "Laws of Thought" and Venn's "Symbolic Logic") for further exploration of specific topics. In her final paper, she discussed Boole's system of logic and Venn's modifications to it, focusing on their different definitions for each operation. She then presented a few of the most interesting problems and proofs from the project, situated them in the historical context, and connected the topics to modern applications we use today. One of the more interesting discussions we had (and a focus of her final presentation) centered around question #23 and the different styles of proofs used in the time of Boole & Venn as compared to how we might construct the proof today. If using this project in future semesters, I would perhaps modify the instructions and expectations to increase the amount of "independent" study being conducted above and beyond the framework of the project as it is currently written. For a capstone project, it would be nice to have the student tie in more of the original source material or generate his or her own questions to explore, in addition to or instead of answering the questions already posed by the author.

Julianna Connelly Stockton,
Assistant Professor Mathematics,
Sacred Heart University