This list is intended as the start of a study guide. There is no guarantee that because a topic is listed here that it will be on the midterm, nor is there a guarantee that every problem on the midterm is represented in the list below. The exam will cover all the material we discussed from Chapters 1–11 and 13–14 along with the additional material on the relationship between Desargues' Theorem and Pappus' Theorem and arithmetic discussed during the final days of the semester.

You should consult the two midterm study guides. In addition to the material listed there:

- What is the relationship between angle and area of triangles in elliptic geometry?

- Chapter 11 introduces an identification that leads to *single* elliptic geometry. Why does your text do this?

- Know how to compute the length of a curve in single elliptic geometry (using the disk model).

- Know how to compute the area of a region in single elliptic geometry.

- Does single elliptic geometry have a notion of cross ratio?

- Given homogeneous coordinates of two disticnt points in $\mathbb{R}P^2$, how do you find the homogeneous coordinates of the projective line that contains them?

- Given homogeneous coordinates of a projective line, how do you determine if a projective point p lies on it?

- Given a projective transformation in homogeneous coordiantes, how can you express the same transformation in inhomogeneous coordinates? Vice-versa?

- What are the statements of Desargues' and Pappus' Theorems?

- Be able to perform straightedge perspective constructions like we did with the tiled plane. For example, if I gave you two pairs of parallel lines on the floor, how can you determine where the horizon is?

- Be able to perform arithmetic on the projective line via geometric constructions.