Homework 7, due March 9th.

Prob 1. Show that a bivariate polynomial p of total degree k is homogeneous if and only if

$$p(tx, ty) \equiv t^k p(x, y).$$

How does this theorem generalize to polynomials in more than two variables?

Prob 2. Prove Pappus's theorem and briefly discuss its history.

Prob 3. Use the lines in Figure 7.5 to draw a pavement tiled by squares in perspective.