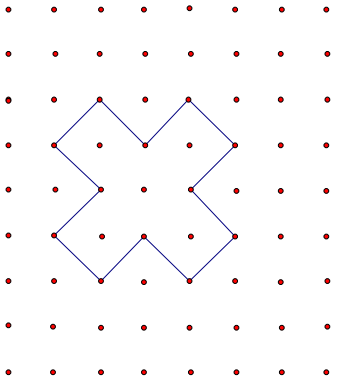
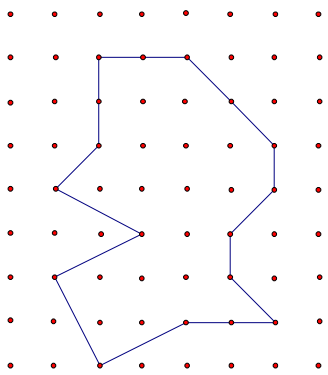
Math 301B **Section 11.1 – Area**

1. Find the exact area of each lattice polygon below. That is, determine how many square units cover the region inside each polygon.

a)



b)



2. a) Suppose that the polygon in part (a) of the previous problem is a scaled drawing on a map of the borders of a city called Crossville. Also suppose that each square unit represents 300 square miles. What is the area of Crossville in square miles?

   b) Suppose that the polygon in part (b) of the previous problem is a scaled drawing of the borders of a city called Polygonville on a map. Also suppose that each square unit represents 515.25 square miles. What is the area of Polygonville in square miles?

3. a) A 10 foot by 12 foot kitchen floor is to be tiled with 1 foot square tiles. How many tiles will be required?
   b) How many tiles will be needed if you use 6 inch square tiles?
   c) How many tiles will be needed if you use 18 inch square tiles?

4. Kelly has been hired to mow a large rectangular lawn measuring 75 feet by 125 feet. The lawn mower cuts a path 18 inches wide. Estimate how far (in feet) must Kelly walk to complete the mowing job. (From: Mathematical Reasoning for Elementary Teachers, Long & DeTemple)

5. An L-shaped house, patio, and lawn is shown situated on a 70 foot by 120 foot lot. The lawn is the dark shaded region. How many bags of fertilizer are needed for the lawn? Assume the bags are each 20 pounds, and 1 pound of fertilizer will treat 200 square feet of lawn.
(From: Mathematical Reasoning for Elementary Teachers, Long & DeTemple)