Some Tiling Problems

Note: Not all of the problems posed are solved! When asked to find the smallest rectangle able to made with given pentominoes, find the smallest you can. It is much more difficult to *prove* your rectangle is the smallest.

1. What is the smallest rectangle which may be tiled with the L and W pentominoes, using at least one of each?

2. What is the smallest rectangle which may be tiled with the P and W pentominoes, using at least one of each?

3. What is the smallest rectangle which may be tiled using the U and F pentominoes, using at least one of each?

4. What is the smallest rectangle which can be made with the Y and Z pentominoes, using at least one of each?

5. What is the smallest rectangle which may be made with the V and Y pentominoes, using at least one of each?

6. Show that it is impossible for the U and W pentominoes to tile *any* rectangle.

7. Show that it is possible for the W pentomino to tile an infinite strip.

8. Can the W pentomino tile a quadrant?

9. Show that the N pentomino can tile a quadrant. Can it tile an infinite strip?

10. Show that the X pentomino cannot tile an infinite strip, but that it can tile the plane.

11. Show that the U pentomino cannot tile an infinite strip, but that it can tile the plane.

12. Create your own tiling problems!