

Math 130: Contemporary Mathematics

Team Project #2, due Wednesday, February 25.

Complete these problems in a group of 3. You may change teams for different assignments if you want. Make sure every member of your team participates in thinking about each problem. Explain your solutions clearly. Credit will be given for creativity and design.

1. Use the wallpaper groups handout to find at least five types of wallpaper groups occurring on campus. For each pattern, carefully sketch the pattern, and include a description of where it occurred. Any physical object may be used. Electronic objects, such as web pages, may not be used. For each pattern that you find, describe the symmetries of the pattern, and determine its wallpaper group. Explain how you classified the pattern according to its group. Extra credit will be given for additional patterns discovered beyond five (each pattern must belong to a separate group).
2. Section 4.4 problem 16. Don't just make a tiling— make an interesting and creative one! You can check out the Escher web page linked to from the course page for ideas.
3. Section 4.4 problem 21. Use the tiles I have available in my office, or the attached page of Penrose tiles, to trace around. Tile a roughly page-sized region. Note the extra rule (not given in the text!) that the tiles can only fit together so that the dots match up along the edges.

