

Final Exam/Project
Due by Friday, December 16, 3:30 pm
Delivered to my office (967 POT) or to my mailbox (715 POT)

READ THE FOLLOWING INSTRUCTIONS CAREFULLY!

1. You are to personally find real-world examples of 12 different symmetry types. We will be discussing symmetry types in class, but in the meantime you can refer to some slides at <http://www.ms.uky.edu/~lee/ma111fa11/slides11good.pdf>.
 - (a) Four of these should be of the Z types— Z_2 , Z_3 , Z_4 , etc. These should be of four different Z types, but do not choose Z_1 .
 - (b) Four of these should be of the D types— D_1 , D_2 , D_3 , etc. These should be of four different D types.
 - (c) The final four of these should be of four of the seven different border pattern types. Again, these should be of four different types.
2. You are to personally photograph each of these 12 examples, and then insert the pictures into a document, ONE PHOTO PER PAGE. Your photographs are to be original, not downloaded from the internet, and no students should be sharing any photographs.
3. You are to add information and explanation to each of your photos. Write a brief paragraph for each photo.
 - (a) For each photograph, identify what it is and where you found it.
 - (b) Identify what symmetry type it represents, and provide your reasoning and analysis to justify your assertion.
 - (c) Use tools such as those included with Microsoft Word to add lines and figures to your photo to highlight such features as reflection lines, centers and angles of rotation, translation vectors, and glide reflection lines and vectors, to accompany your analysis. Another method is to insert the photo into GeoGebra and use its tools to annotate the photo. Another alternative is to draw the additional lines and figures CAREFULLY by hand and scan the result.
4. Be sure your name is on the document, save your document, and then print a physical copy. Check to see that the document is correct, and then deliver it to me or to my mailbox by the indicated deadline above.