

Michigan Math Club

Thursday at 4pm in the Commons

Free Pizza and Pop

Wallpaper symmetry

Martin Strauss

Abstract for 11 September

Wallpaper has translation symmetry and may also have reflection symmetry, rotation symmetry, or glide reflection symmetry. Although interior decorators have catalogs with thousands of different wallpaper swatches, there are exactly 17 different types of symmetries possible, as can be shown by rolling up the wallpaper or cutting, twisting, folding, etc., so that everything lines up, and then examining the holes, cusps, and other injuries to the resulting torus, Klein bottle, or other surface.

Can you find specimens around U-M with the symmetry types depicted below? Others? Can you witness these patterns via paper mutilation?

