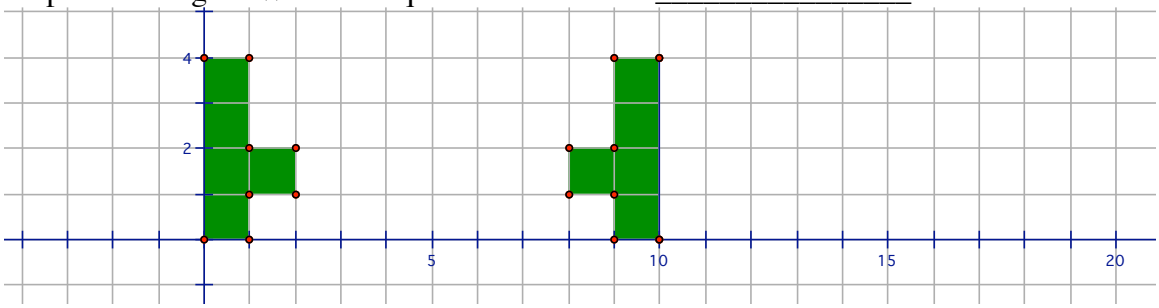
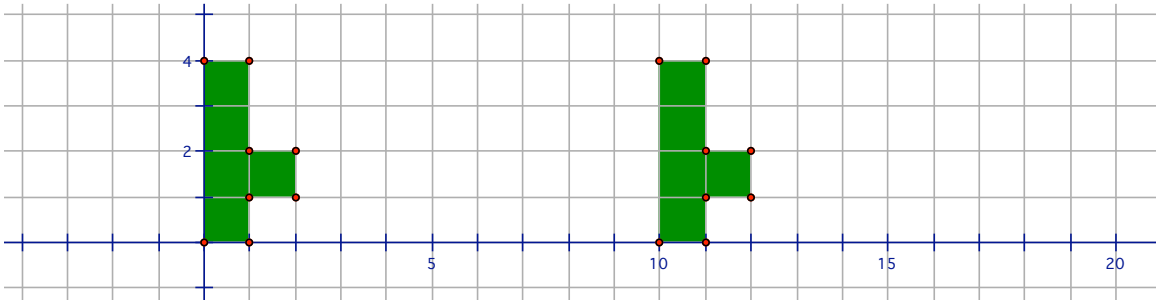
Friday, 11/12: Double Mirrors

In these questions, the transformation of reflection in a line m is denoted by R_m, reflection in n is denoted by R_n, etc.

Problem 1. Draw a line m so that the reflection R_m maps the shape on the left to the shape on the right. Write the equation of this line. _____



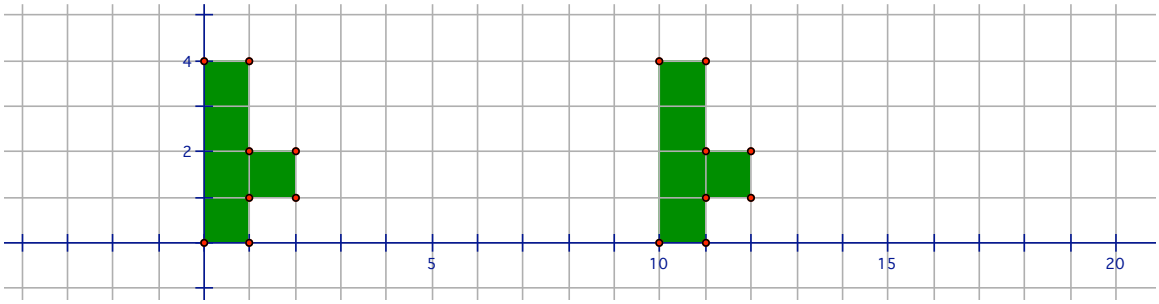
Problem 2. Draw a line a and a line b so that the composition of reflections R_bR_a maps the shape on the left to the shape on the right. Write the equations of these lines.
Equation for a: _____ Equation for b: _____



Problem 3. Suppose line m has equation x = 2. Draw line m and a line n so that the composition of reflections R_nR_m maps the shape on the left to the shape on the right. Write the equation of line n. Equation for n: _____

What is the image of the shape on the right by the transformation $F = R_nR_m$? _____

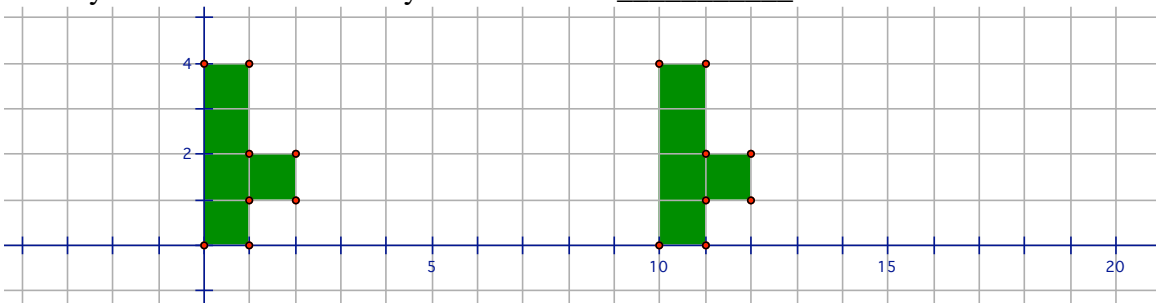
What is the image of this shape by $G = R_mR_n$? _____



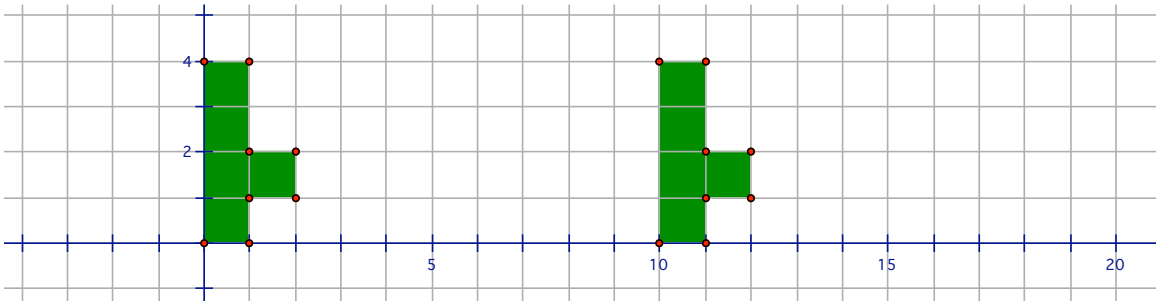
Problem 4. Suppose line p has equation x = 15. Draw line p and a line q so that the composition of reflections R_qR_p maps the shape on the left to the shape on the right. Write the equation of line q. Equation for q: _____

Also, draw and describe the image of the shape on the left by the transformation $T = R_m R_n R_qR_p$. _____. What is a special name for T?

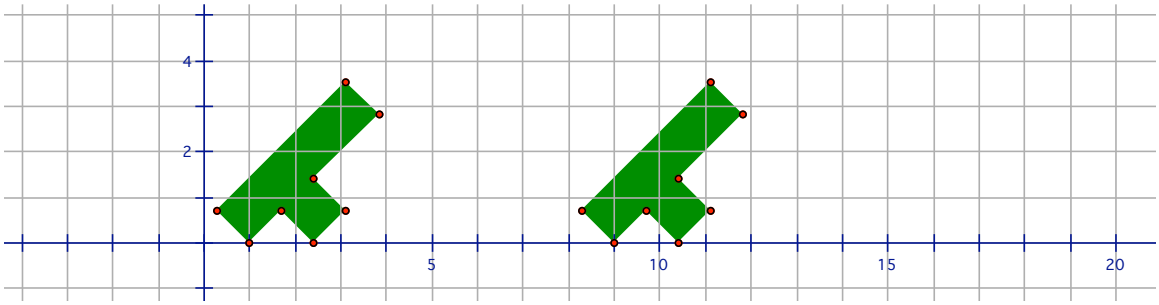
What is the image of the object on the left by the transformation $H = R_nR_qR_p$.?_____ Identify the transformation H by another name. _____



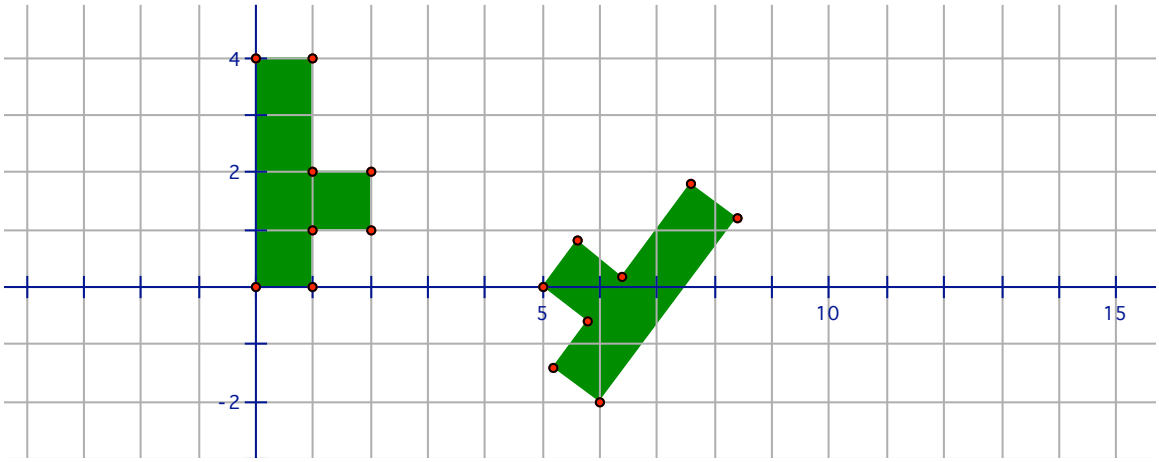
Problem 5. Suppose line p has equation x = 15. Draw line p and a line r so that the composition of reflections R_pR_r maps the shape on the left to the shape on the right. Write the equation of line r. Equation for r: _____



Problem 6. Write the equations of two lines u and v so that R_vR_u maps the shape on the left to the shape on the right.



Problem 7. Write the equations a line h so that R_h maps the shape on the left to the shape on the right.



Problem 8. Write the equations of two lines j and k so that R_jR_k maps the shape on the left to the shape on the right.