

Math 116: HOMEWORK #15

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1.

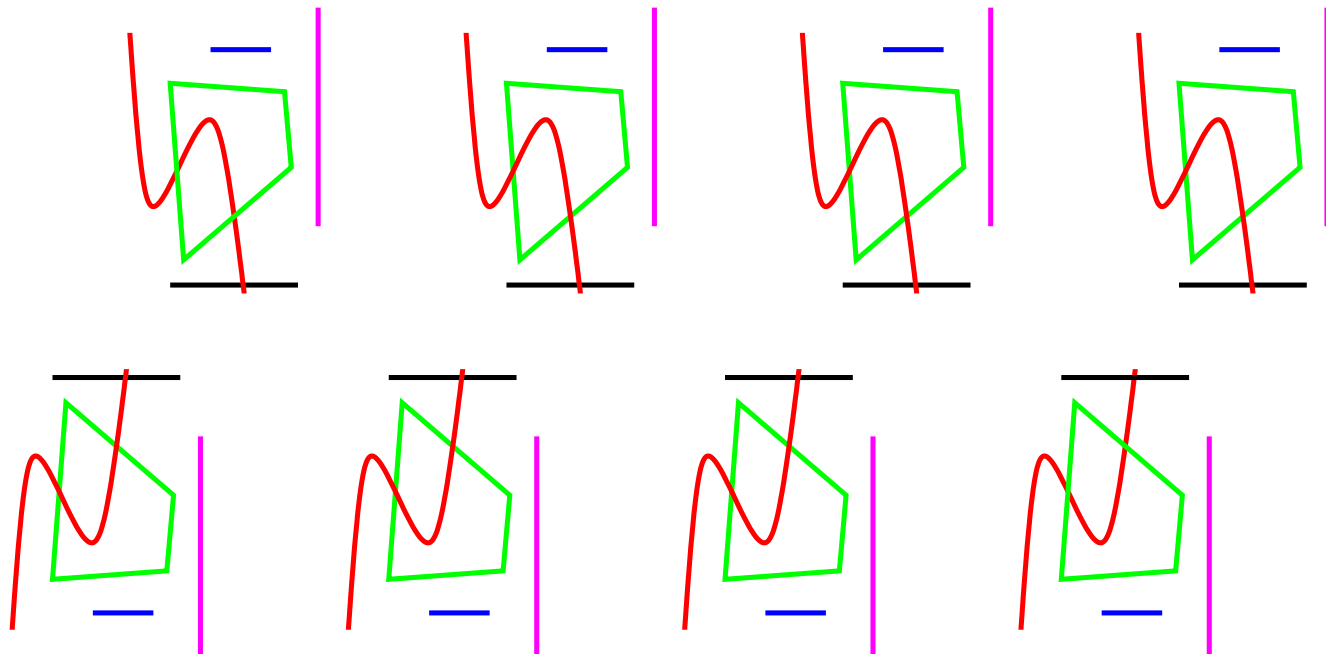
- Draw a figure with the symmetry group

$$Z_1, Z_2, Z_3, Z_4, Z_5, Z_6, D_1, D_2, D_3 .$$

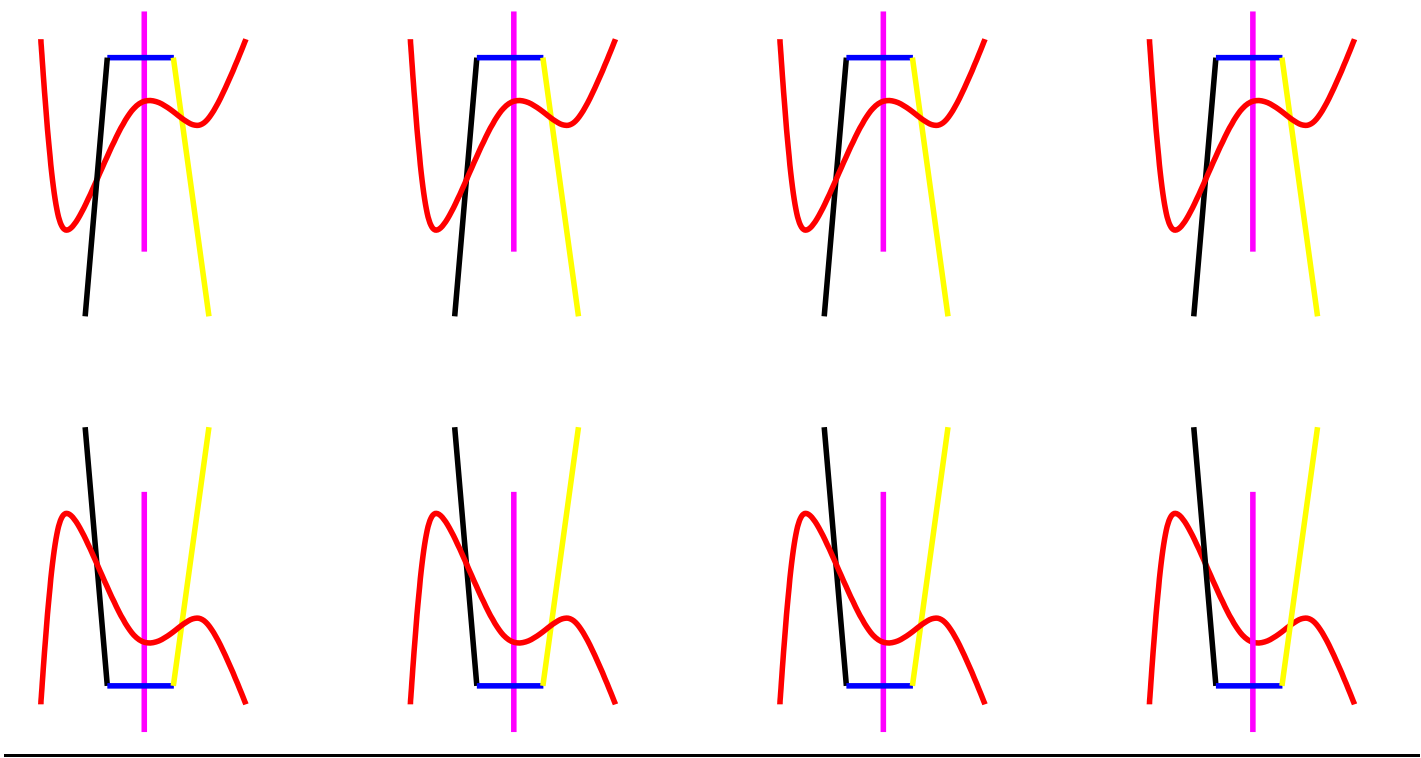
- Find the multiplication table for each of them.
- Recognize C_2 , C_3 , and C_5 among them.

2. For each of the following border patterns, give its symmetry type using the standard crystallography notation (mm , mg , $m1$, $1m$, $1g$, 12 , 11).

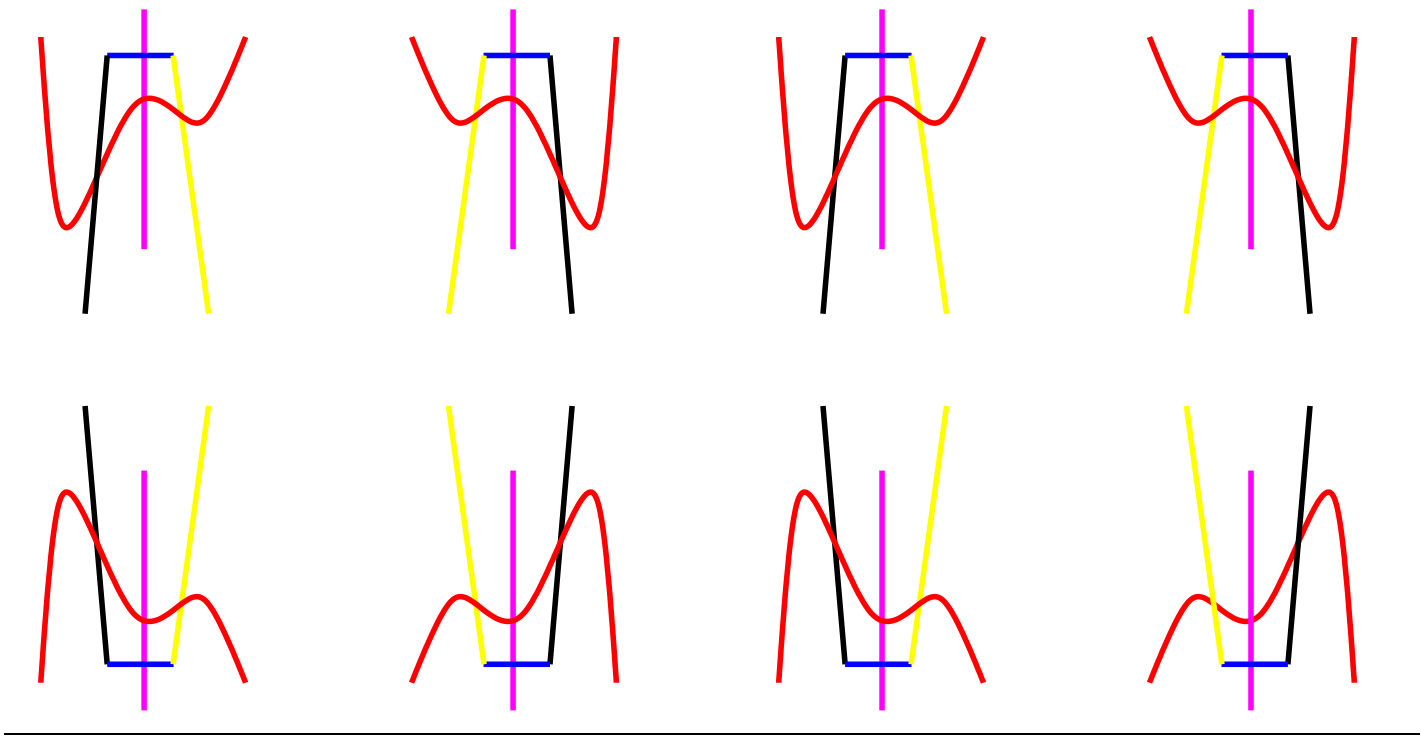
(A)



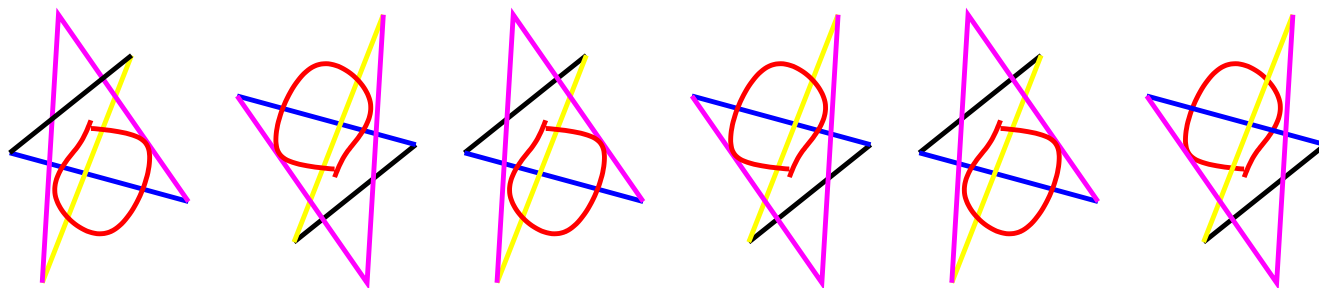
(B)



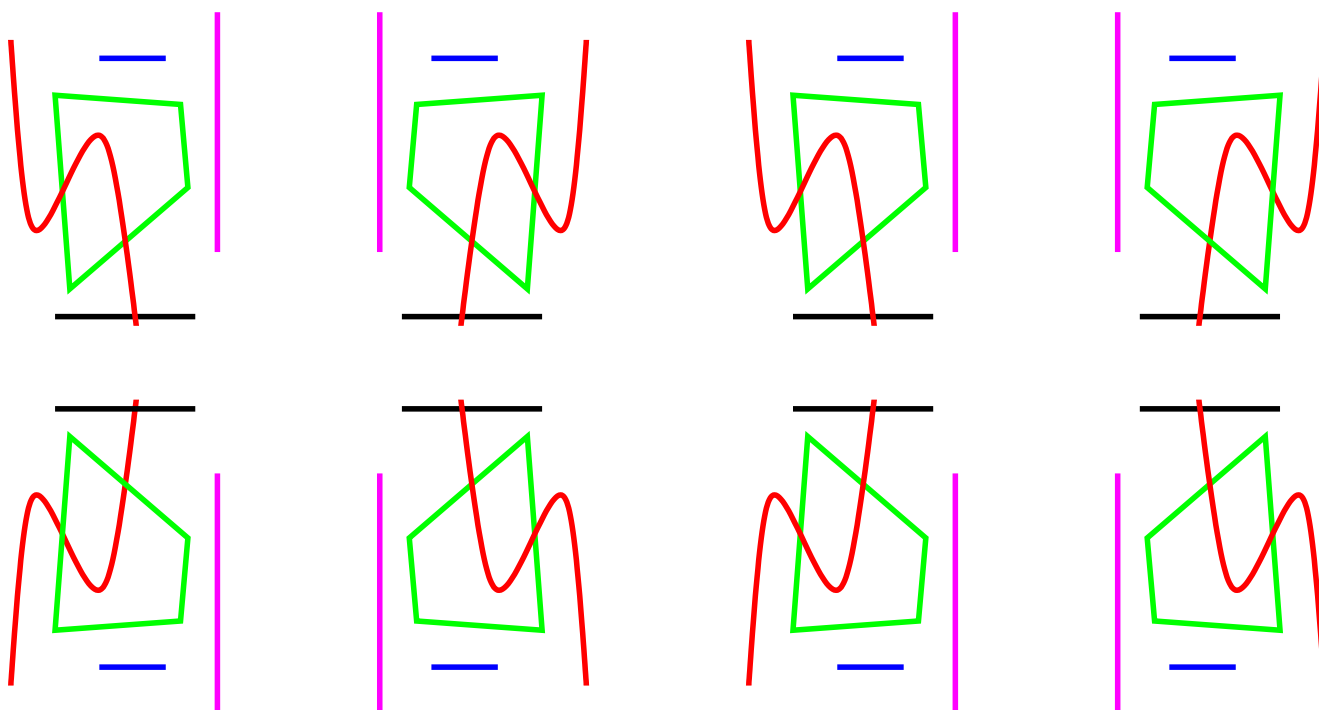
(C)



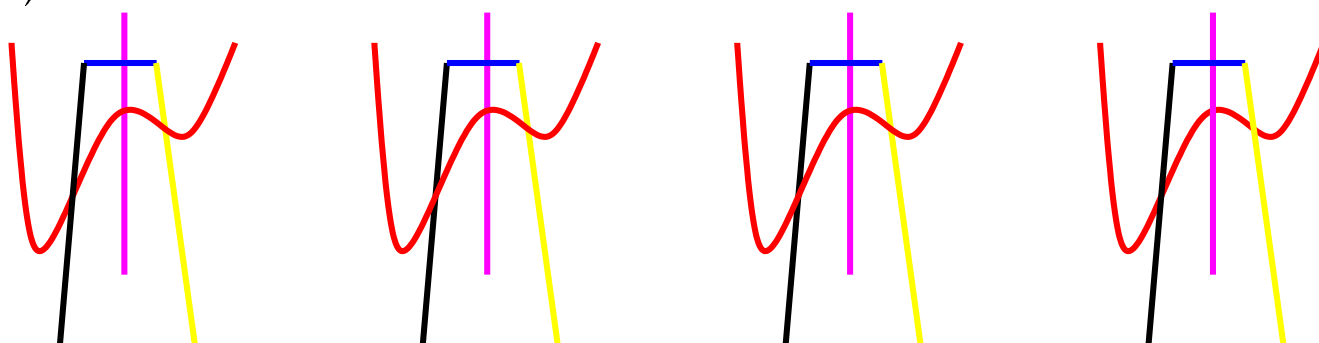
(D)



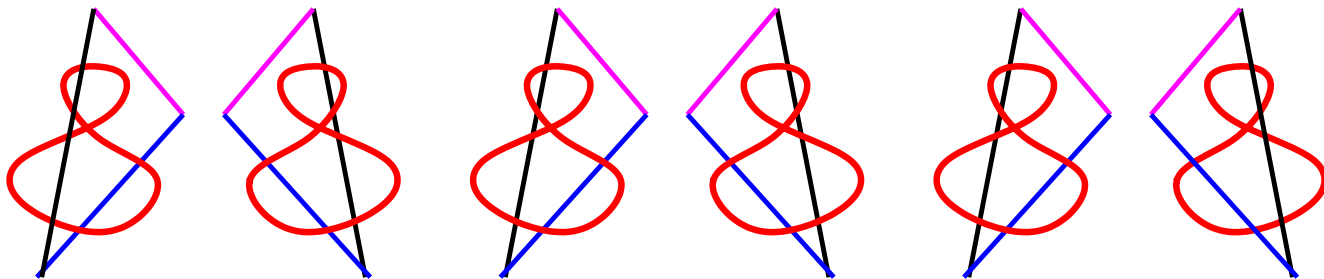
(E)



(F)



(G)



AND

p.377, Chapter 9, #'s: **2, 4, 6**