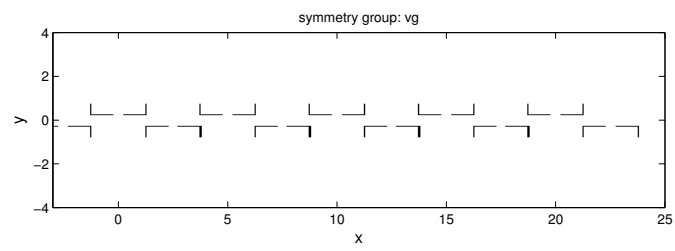
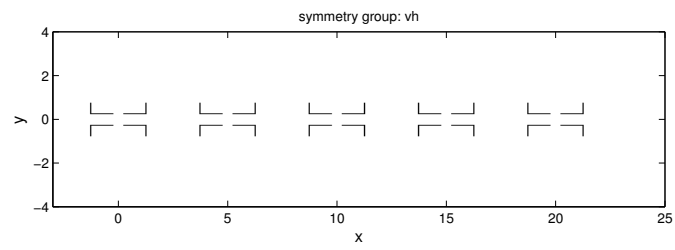
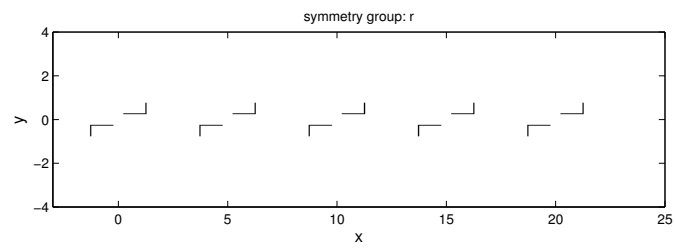
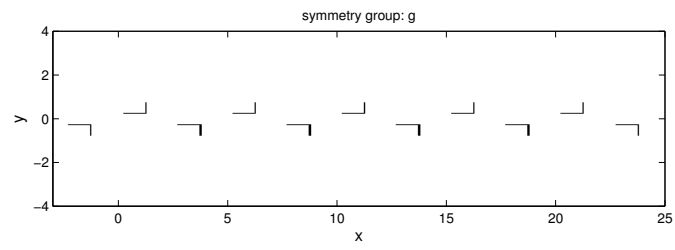
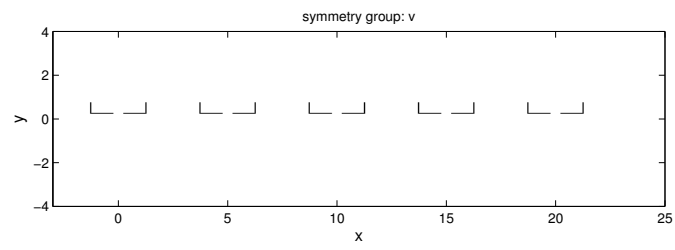
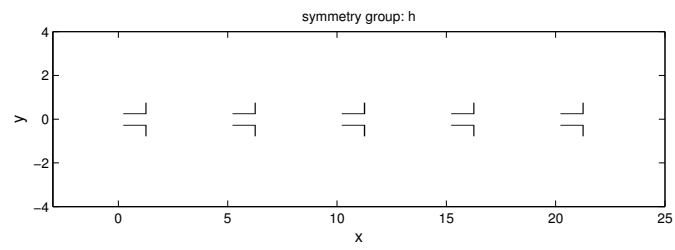
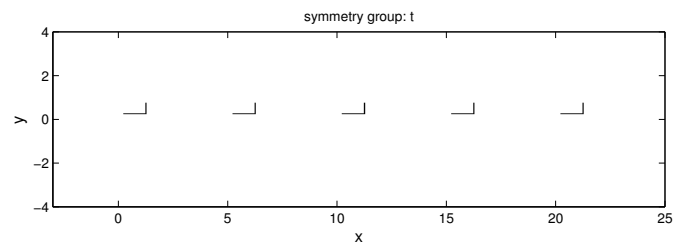


1 Border patterns

Notation	Symmetry properties
t	no symmetry beyond translations (which we take to be horizontal)
h	horizontal mirror symmetry (i.e., in the direction of the translation)
v	vertical mirror symmetry (vertical mirror axes separated by half the translation length)
g	glide reflection symmetry (horizontal reflection plus shift equal to half the translation length)
r	order-2 rotational symmetry (i.e., rotation by 180 degrees) (rotation centers separated by half the translation length)
vh	both vertical and horizontal mirror symmetry (implies order-2 rotational symmetry with rotation centers at intersection of mirror axes)
vg	both vertical mirror and glide reflection symmetry (implies order-2 rotational symmetry with rotation centers half way between intersection of mirror axes)



2 Wallpaper patterns

Notation	Lattice	Rotation	Symmetry properties
p1	parallelogram	1	no symmetry beyond translations (one of which we take to be horizontal, the other defining a parallelogram)
pm	rectangle	1	horizontal mirror reflection symmetry (parallel to the T1 translation vector); the second translation vector T2 is perpendicular to the first.
cm	rhombus	1	horizontal mirror and glide reflection symmetry; the mirror axes bisect the translation axes, and the glide reflection axes are located half way between mirror reflection axes.
pg	rectangle	1	horizontal glide reflection symmetry (parallel to the T1 translation vector); the second translation vector T2 is perpendicular to the first.
p2	parallelogram	2	order-2 rotational symmetry
pmm	rectangle	2	horizontal and vertical mirror reflections that are parallel to the two translation axes; automatically have 2-fold rotation symmetry, with all rotation centers lying on the intersection of the mirror axes.
cmm	rhombus	2	horizontal and vertical mirror reflections that bisect the translation axes; some 2-fold rotation centers lie on the intersection of the mirror axes, but some do NOT.
pmg	rectangle	2	horizontal mirror and vertical glide reflection symmetry; automatically have 2-fold rotation symmetry, with the rotation centers NOT on the intersection of the mirror and glide reflection axes.
pgg	rectangle	2	horizontal and vertical glide reflection symmetry; automatically have 2-fold rotation symmetry, with the rotation centers NOT on the intersection of the glide reflection axes.
p3	hexagon	3	order-3 rotational symmetry
p3m1	hexagon	3	order-3 rotational symmetry, with mirror reflection axes every 60 degrees, starting at 30 degrees (all rotation centers lie on the intersection of the mirror reflection axes)
p31m	hexagon	3	order-3 rotational symmetry, with mirror reflection axes every 60 degrees, starting at 0 degrees (some rotation centers do NOT lie on the intersection the mirror reflection axes)
p4	square	4	order-4 rotational symmetry
p4m	square	4	order-4 rotational symmetry and mirror reflection axes at multiples of 45 degrees
p4g	square	4	order-4 rotational symmetry and perpendicular glide reflection axes directed at 45 and 135 degrees
p6	hexagon	6	order-6 rotational symmetry
p6m	hexagon	6	order-6 rotational symmetry and mirror reflection axes at multiples of 30 degrees

