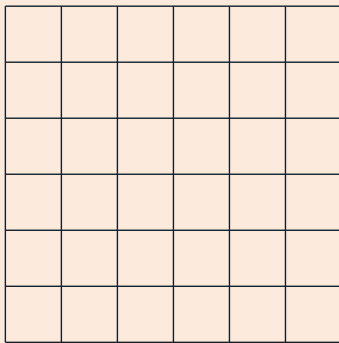


TRANSLATING A TRIANGLE ON THE GRID

- 1 Start with vertices at (1,1), (3,1) and (2,4).
- 2 Add 3 to each x-coordinate for a slide 3 right.
- 3 Subtract 2 from each y-coordinate for a slide 2 down.
- 4 The image vertices are now at (4,-1), (6,-1) and (5,2).

WARM-UP

Complete the symmetric grid of Irish county triangles.



1. Mark the triangle at (1,1), (3,1), (2,4) and its image after 3 right 2 up.
2. Mark the triangle at (2,2), (4,2), (3,5) and its image after 4 right 2 down.
3. Mark the triangle at (4,1), (6,1), (5,4) and its image after 4 left 2 up.

PRACTICE

- 1 The triangle marking Dublin, Meath and Kildare starts at (5, 1), (7, 1), (6, 4). Slide it 3 right and 1 up on the map of Ireland.
- 2 The triangle marking Cork, Limerick and Tipperary starts at (5, 5), (7, 5), (6, 8). Slide it 2 right and 3 down across the counties.
- 3 The triangle marking Galway, Mayo and Roscommon starts at (1, 3), (3, 3), (2, 6). Slide it 2 right and 3 up on the Irish grid.
- 4 The triangle marking Waterford, Wexford and Kilkenny starts at (7, 4), (9, 4), (8, 7). Slide it 5 left and 1 up to its new spot.
- 5 The triangle marking Donegal, Sligo and Leitrim starts at (2, 1), (4, 1), (3, 4). First slide 3 right then 4 down
 (2,1), (4,1), (3,4) translated 3 right then 4 down

? ALWAYS, SOMETIMES, NEVER

Always, sometimes or never true? Write A, S or N.

- a. A translation moves every vertex the same distance and direction.
- b. After translation the shape is the same size and orientation.
- c. The image after translation has different side lengths.
- d. Translating a shape makes it overlap another shape on the grid.