Maths - Year 6

Geometry 3: Transformations in the four quadrants

Key Vocabulary

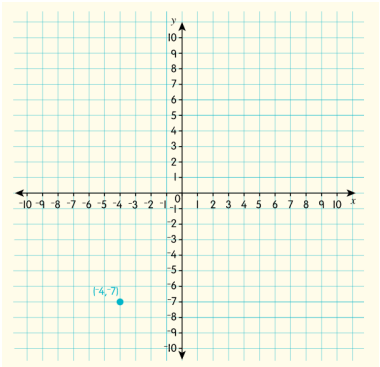
Point of intersection	The point where two lines or two curves meet each other.
Axis/axes	The line/lines that frame a coordinate grid. The x-axis is the horizontal axis and the y-axis is vertical.
Origin	The starting point.
Coordinates	Pairs of numbers describing a position on a grid, e.g. (2,3).
Quadrant	One of the four equal areas made when a grid, or a shape, is divided into four.
Translation	A transformation involving sliding a shape or object to a different position in a specific direction.
Transformation	A way of describing the changes that can be made to the size and/or position of a shape or object, e.g. reflection, translation, rotation or scaling.
Congruent	Identical in form.
Bisect	To split something into equal halves.

Mathematical Skills

- Generalise that coordinates describe position in relation to given axes.
- Explain that to the right of the y-axis the x-coordinates are positive; to the left of the y-axis the x-coordinates are negative; above the x-axis the y-coordinates are positive; below the x-axis the y-coordinates are negative.
- Translate coordinates accurately using coordinates.
- Identify the translation that would move an original shape to its new position.
- Use written coordinates to visualise and predict results.
- Locate and name coordinates of 'missing' vertices of regular polygons.

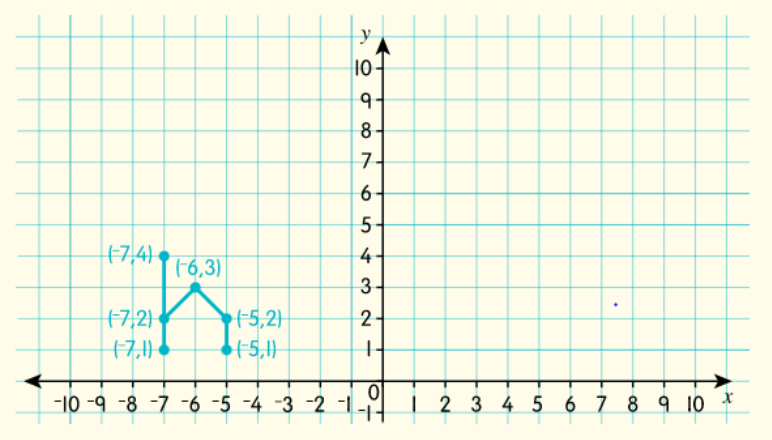
Mathematical Methods

- Introducing coordinates in four quadrants.

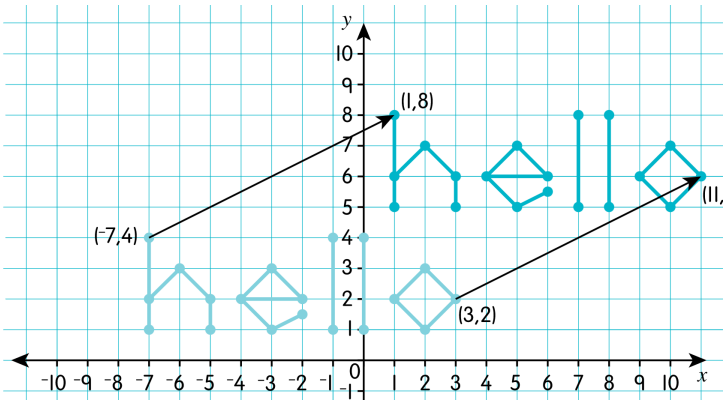


- Using coordinates in four quadrants.

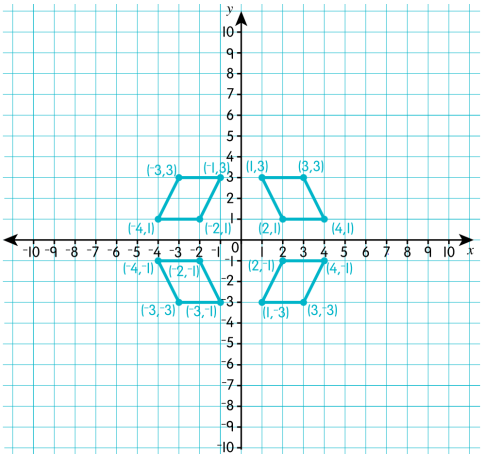
go to (-7,1)
pen down
go to (-7,4) (-7,2) (-6,3) (-5,2) (-5,1)
pen up



- Transformations in four quadrants—translation.



- Transformations in four quadrants—reflection in the axes.



Can you..?

- Can you plot and connect these coordinates? (-5,2) (-2,4), (-5,8), (-7,6), (-5,2).

Now can you translate the coordinates to (x + 9, y - 9)?

- Can you plot an oblong in the third quadrant and then reflect its points in the x-axis?