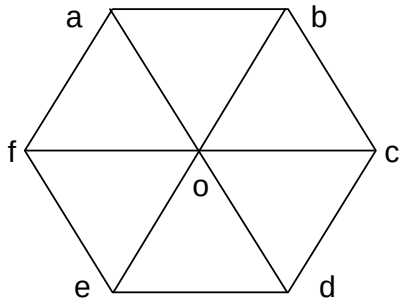
Theorems 5

This class has translations and symmetries.

Translation

This is the movement of a point or line for a certain distance in a certain direction.

Example 1



(i) Find the image of a under the translation ed.

(ii) Find the image of [cd] under the translation o to f.

(ii) Find the image of Δaof under the translation bc.

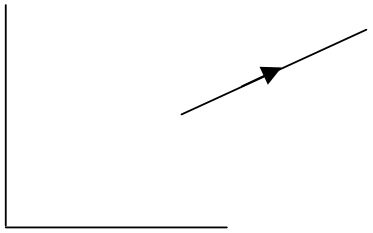
Solution

(i) Translation e to d will move a to b.

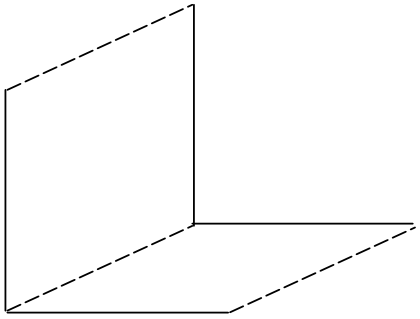
(ii) Translation o to f will move c to o and d to e. Answer is [oe]

(iii) Translation b to c will move a to o, o to d and f to e.
Answer Δode

Example 2 Move the shape under the translation.



Draw the L shape out for yourself.



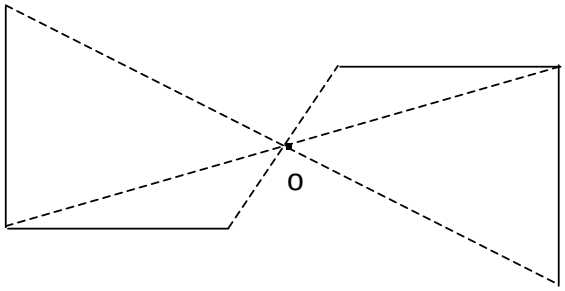
When we move a shape under a translation it will not change shape.

Central Symmetry

This is where we move through a point and go the same again the other side.

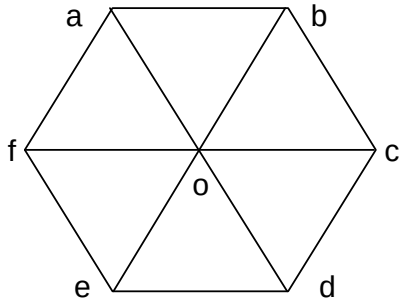
Example 3 Move the shape under central symmetry in o.

Draw the L shape out for yourself.



The shape gets turned up side down.

Example 4



(i) Find the image of a under central symmetry in o.

(ii) Find the image of [cd] under central symmetry in o.

(iii) Find the image of Δaof central symmetry in o.

Solution

(i) a goes through o to d.

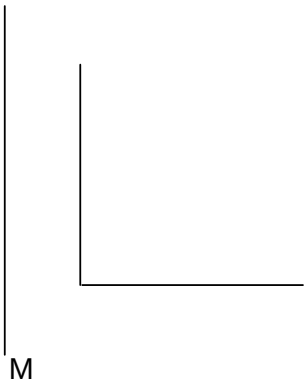
(ii) c goes through o to f and d goes through o to a Answer [fa]

(iii) a goes to d, o stays at o and f goes to c. Answer Δdoc.

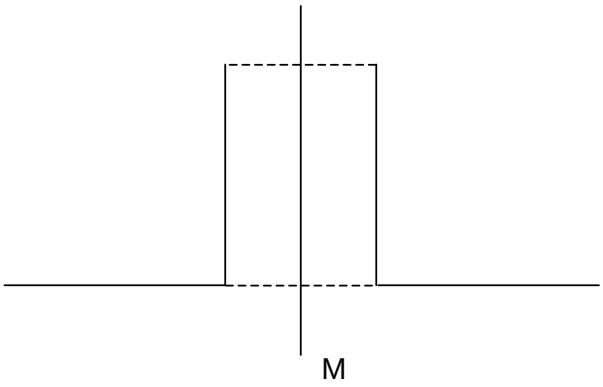
Axial Symmetry

This is where we move through a line at right angles and go the same again the other side.

Example 5 Move the shape under axial symmetry in line M.



Draw the L shape out for yourself



The shape gets turned backwards.