

# RIGID TRANSFORMATIONS GUIDED NOTES

## WHAT IS A Rigid TRANSFORMATION?

The word rigid means "not able to be changed".

The word transformation means "a dramatic change in form or appearance."

A "rigid" transformation seems like an oxymoron, right?

However, in mathematics a rigid transformation is when we change a figure's location or orientation without changing its size or shape.

The three rigid transformations we will be studying are:

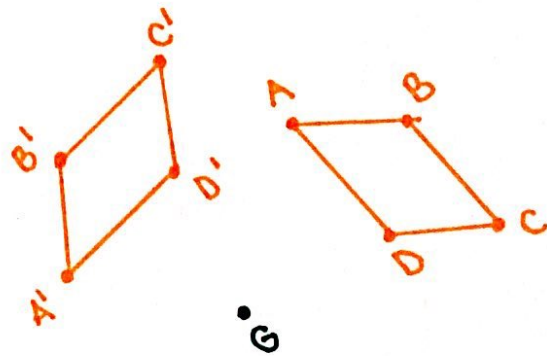
- rotation
- translation
- reflection

## ROTATION

A figure is **rotated** when it has been turned about a point either clock-wise or counter clock-wise by a certain angle measure.

Example:

Figure **ABCD** has been rotated 90 degrees counter clock-wise about point G.

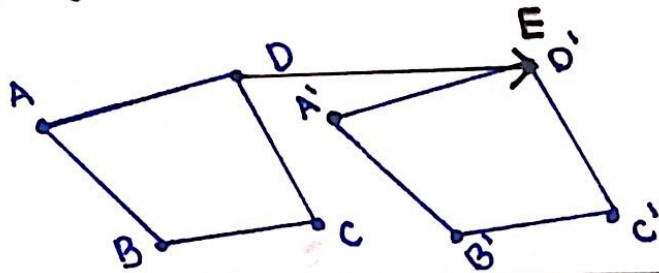


## TRANSLATION

A figure is **translated** when it has been slid up, down, left or right without changing its orientation.

Example:

Figure ABCD has been translated by vector  $\overrightarrow{DE}$ .

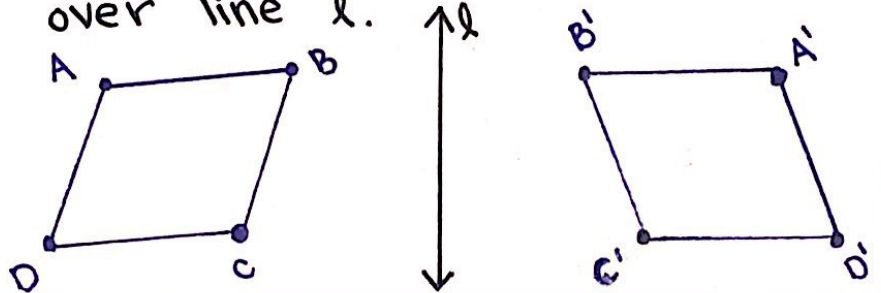


## REFLECTION

A figure is **reflected** when it has been flipped over a line.

Example:

Figure ABCD has been reflected over line  $l$ .



## KEY Vocabulary

- Prime Notation: after a rigid transformation has taken place, we use this notation to distinguish the original figure from the newly transformed figure.
- Pre-image: the name of the figure before a rigid transformation has taken place.
- Image: the name of the figure after a rigid transformation has taken place.