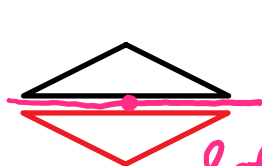
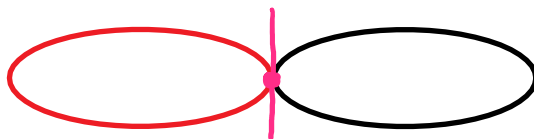


WARM UP

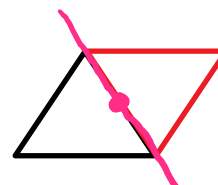
What rigid transformation maps each figures preimage to its image?
 Preimages are black, images are red.



- Reflection
 - Rotation



- Reflection
 - Rotation
 - Translation



- Reflection
 - Rotation on a few points
 - Glide Reflection

ESSENTIAL QUESTION

How can you tell whether a figure is symmetric?

NEEDED VOCAB:

- ▶ Point Symmetry
- ▶ Reflectional Symmetry
- ▶ Rotational Symmetry

GOAL: "I CAN..."

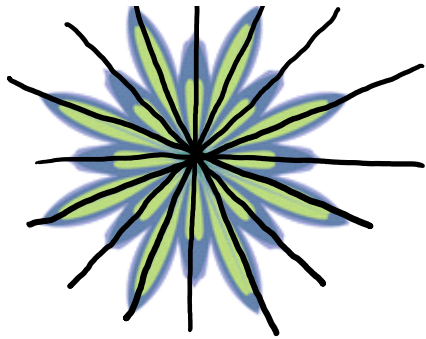
Identify different types of symmetry in two-dimensional figures."

Looking at these three images of a kaleidoscope, how are pieces A and B related to one another? Discuss your ideas with the people next to you. Also discuss your groups thoughts about how Pieces A and B relate to the larger image.



LOS: 8

1.1.1 Symmetry: 4h⁰



LOS: 8
rotational symmetry: 45°



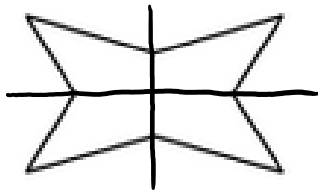
Piece A



Piece B

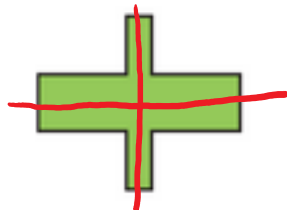
EXAMPLE 1

What transformations can be used to map the figure onto itself? Why can some figures be mapped onto themselves and some can't?



2 LOS.
 180° rot. sym.

1.A) What transformations map the figure onto itself?



LOS: 2
R.S.: 180

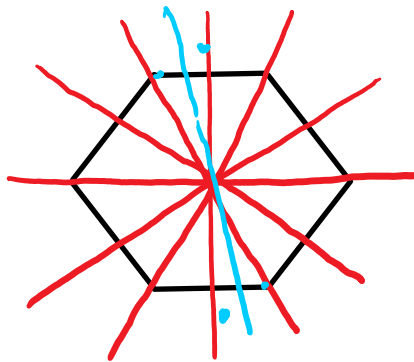
B) What transformations map the figure onto itself?



LOS: 1
No Rot. Sym.

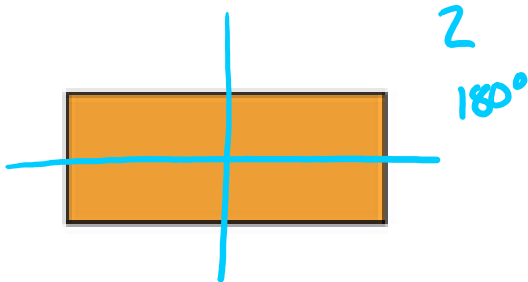
EXAMPLE 2

How many lines of symmetry does a regular hexagon have?

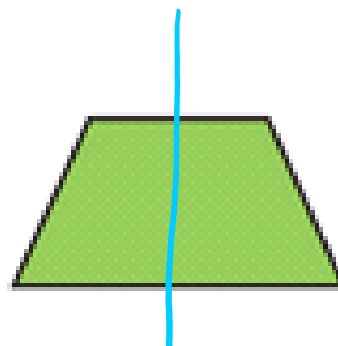


LOS: 6
60° rot sym.

How many lines of symmetry do each of the figures have? How do you know whether you have found them all?



2
180°

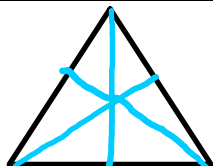


1
No
Rot.
Sym.

EXAMPLE 3

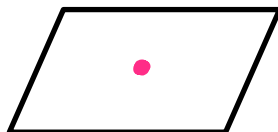
For what angles of rotation does the figure map onto itself?

Equilateral Triangle



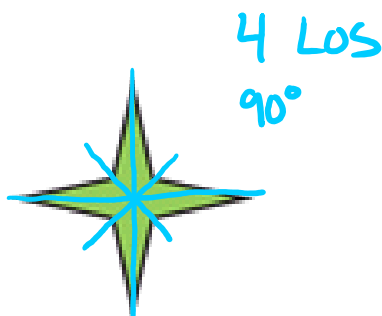
3 LOS
 120°

Parallelogram

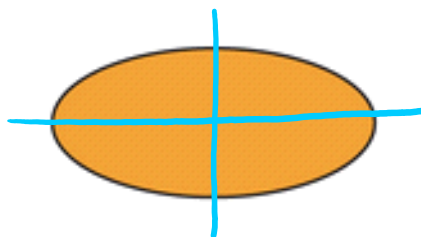


Point symmetry

What are the rotational symmetries for the figures? Do the figures have point symmetry?



4 LOS
 90°



2 LOS
 180°

What type(s) of symmetry do the figures have?

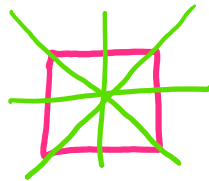
Reflectional
5 LOS

Point



Point
symmetry.

What symmetries does a square have?



4 lOS
 90°

Symmetry

Reflectional Symmetry

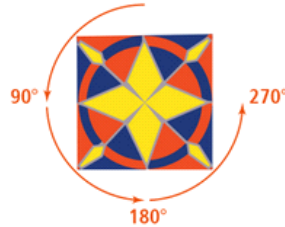
WORDS

- A figure that maps onto itself when it is reflected over a line has reflectional symmetry.
- A line of symmetry is a line of reflection when a figure is reflected onto itself.

Rotational Symmetry

- A figure that maps onto itself when it is rotated about its center by an angle measuring less than 360° has **rotational symmetry**.
- A figure with 180° rotational symmetry has **point symmetry**.

DIAGRAM



HOMework

Pg. 140

13, 15, 20, 21-25 ODD, 28, 29