Mathematics

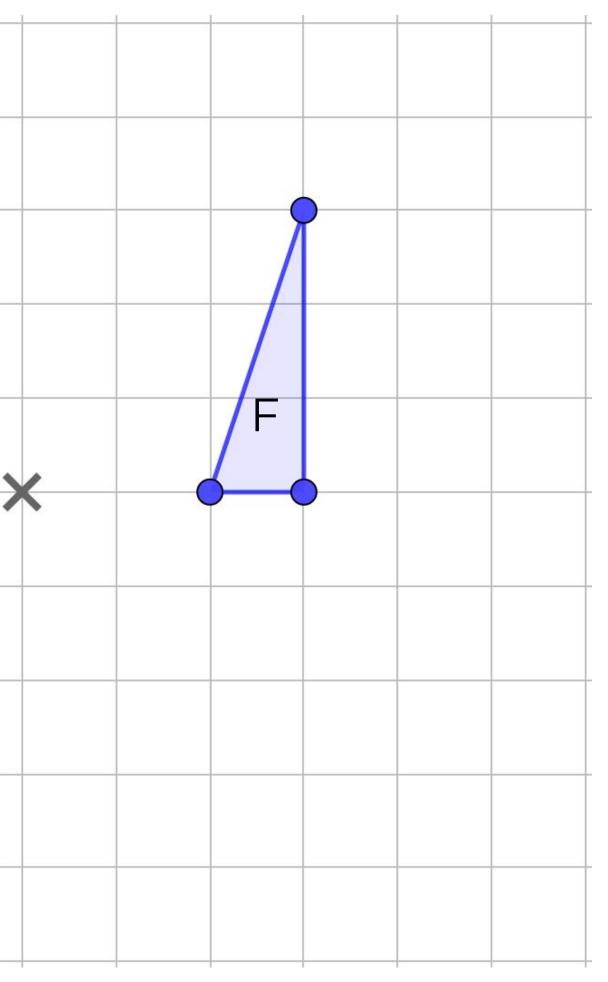# Transformations: Rotations Worksheet

Mrs Buckmire

Try this

Here is a triangle placed on a unit grid.

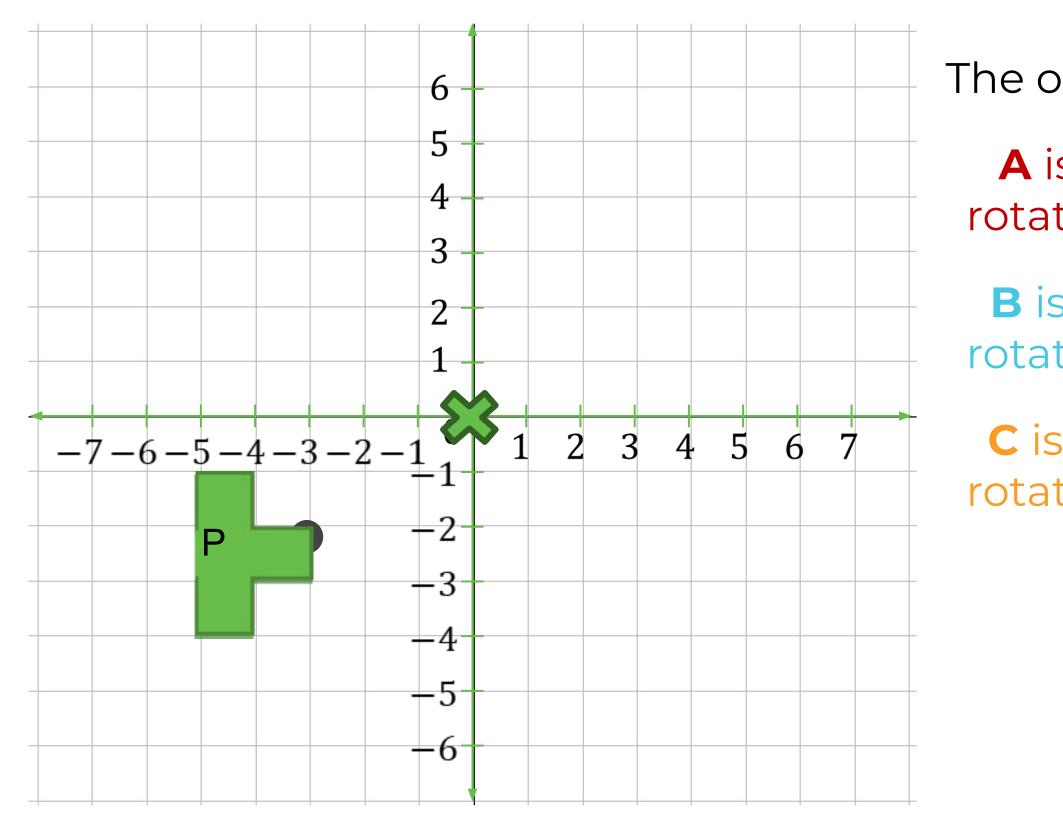a) What is the distance of each of the triangle's vertices to the cross?

b) Draw the different positions that the triangle can be moved to, so that:

- Each vertex remains the same distance from the cross.

- The front face of the shape, labelled F, remains seen .
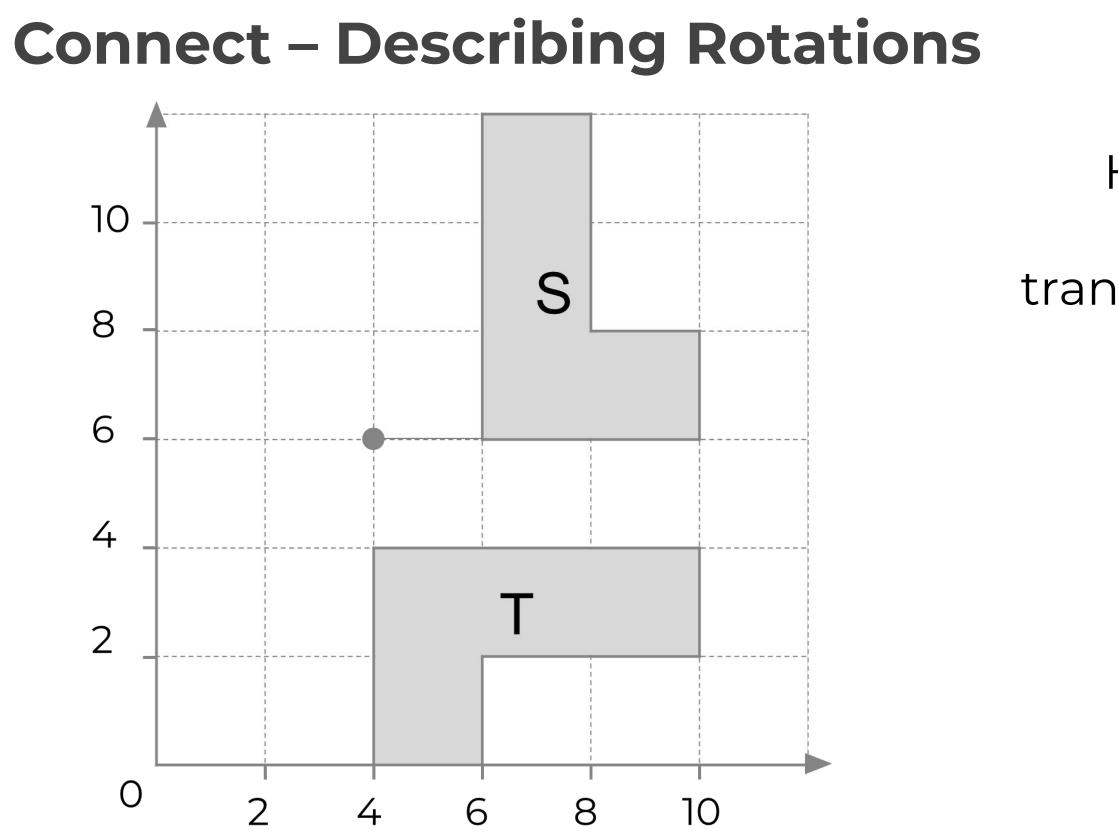
Connect – Rotating Shapes

The octagon P is rotated about the origin.

A is the image after a **90 degrees** rotation **clockwise** about **the origin.**

B is the image after a **180 degrees** rotation **clockwise** about **the origin.**

C is the image after a **270 degrees** rotation **clockwise** about **the origin.**
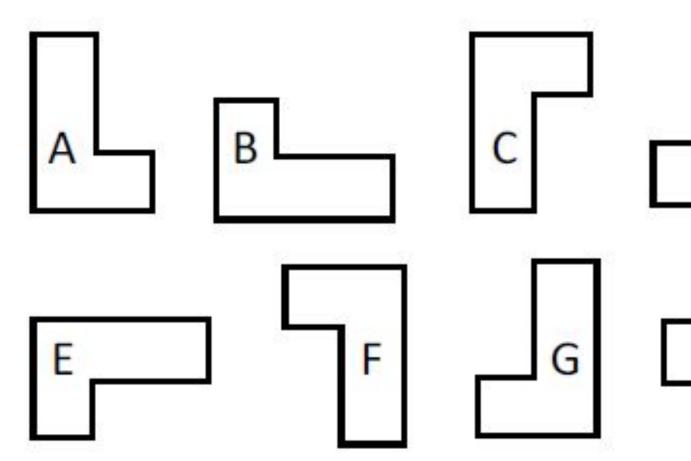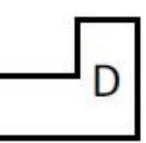
Connect – Describing Rotations

How many ways can you describe a single transformation from hexagon S to hexagon T ?
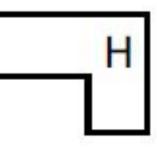
Independent task (page 1 out of 3)

1. Generate <u>five</u> statements describing the angle and direction of rotation between two shapes.

E.g. *H to C is a rotation of 270 degrees clockwise.*
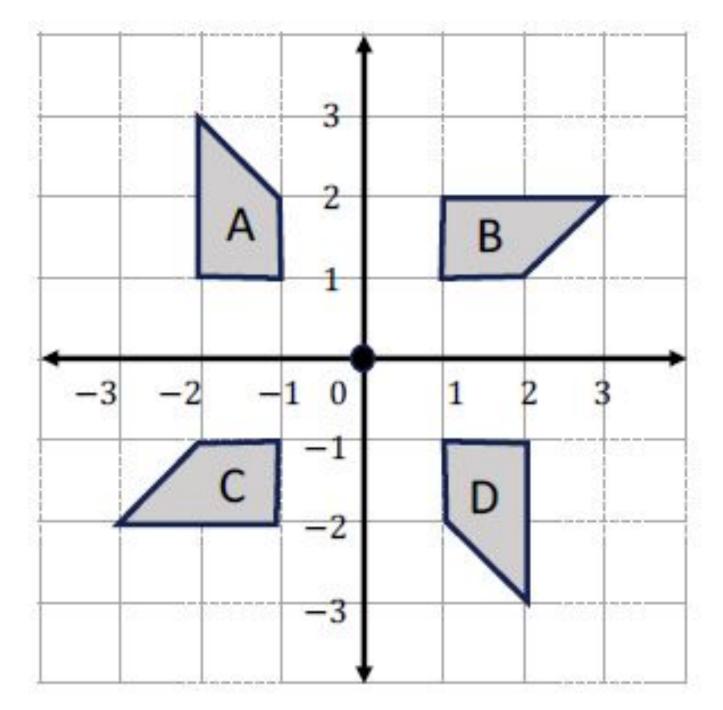
Independent task (page 2 out of 3)

2. Describe the following transformations:
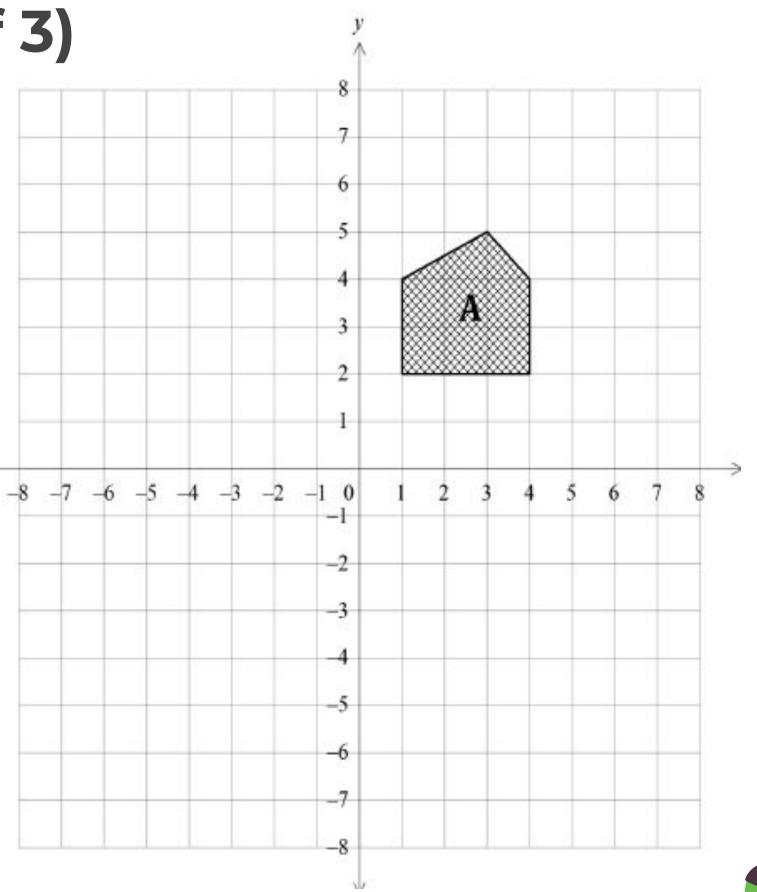
a) A to B

b) A to D

c) A to C

d) B to C

Independent task (page 3 out of 3)

3. Shape A has been rotated. Where would the vertex marked end up after:

a) A rotation 90 degrees clockwise about (1, 1)?

b) A rotation 90 degrees anticlockwise about (1, 1)?

c) A rotation 180 degrees about (1, 1)?
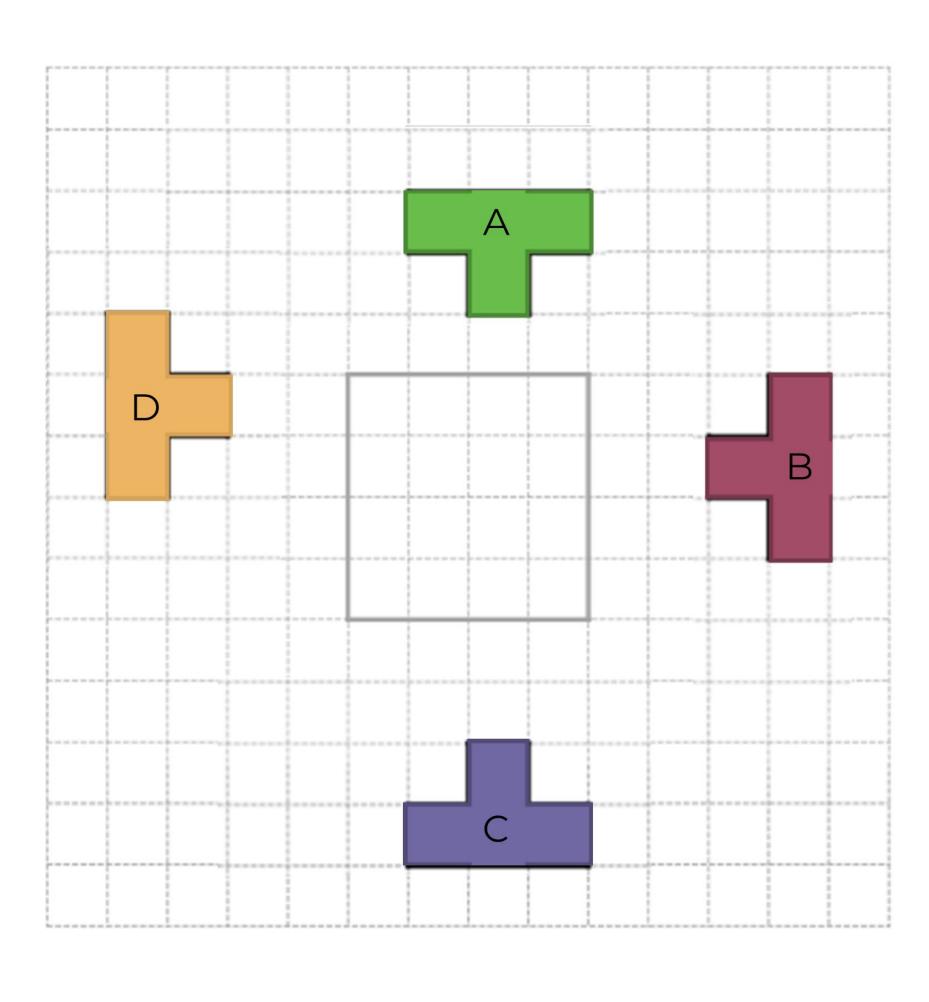
d) A rotation 90 degrees clockwise about (-1, 1)?

Explore

Describe rotations that would create a square from the given shapes.

HINT
Mark centre of rotations with crosses and label.

Support on the next slide.

Explore (Support)

Describe rotations that would create a square from the given shapes.

> Rotate A about 1
> Rotate B about 2
> Rotate C about 3
> Rotate D about 4

For each description fill in the gaps.

Shape ___ has been rotated about point ___, ___ degrees, clockwise/anti-clockwise.