

Number Nest Weekly Challenge



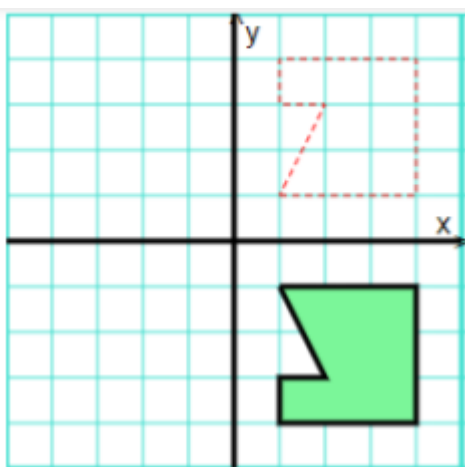
Warm up

- Which of the following is **not** a transformation:
a) Reflection b) Enlargement **c) transcription** d) translation
- What is the new coordinate when (11, 7) is reflected in the y-axis?
(-11, 7)
- Write the translation of (0,1) to (-5, 4) in words (bonus: in column vector form):

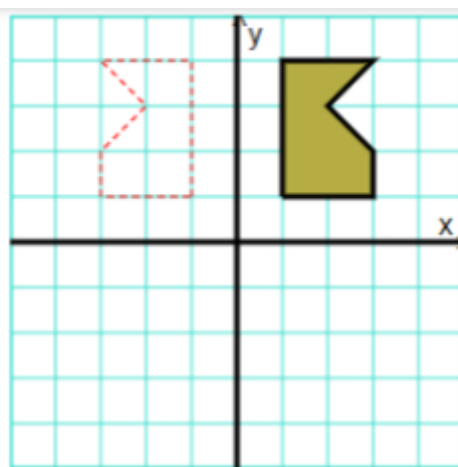
Move left 5 spaces and up 3 spaces, $\begin{pmatrix} -5 \\ 3 \end{pmatrix}$

Activity

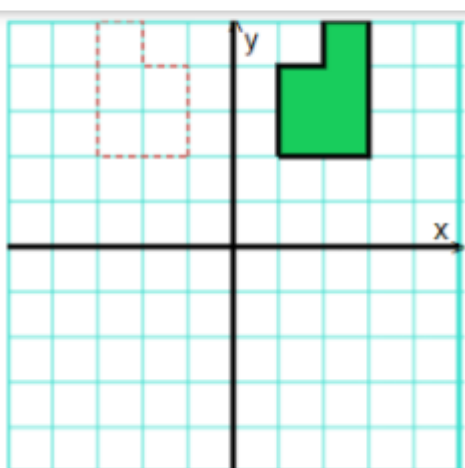
- Draw the reflection of the following shapes:



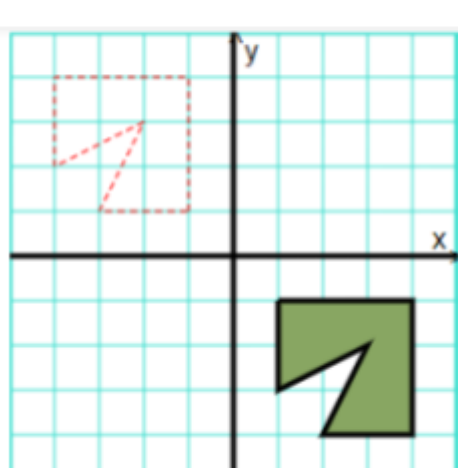
Draw the reflection of the shape in the x axis.



Draw the reflection of the shape in the y axis.



Draw the reflection of the shape in the y axis.



Draw the reflection of the shape in $y = x$

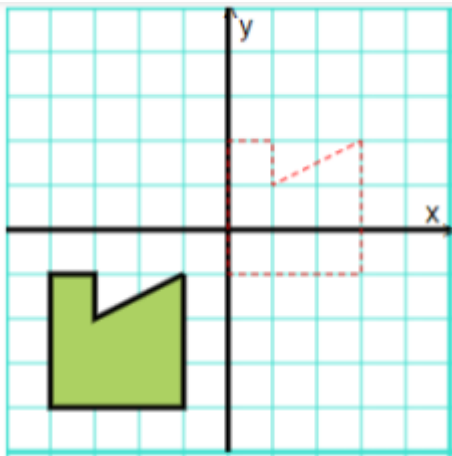
What happens to the y-coordinate and x-coordinate during a reflection in the x-axis? **(x, y) becomes (x, -y)**



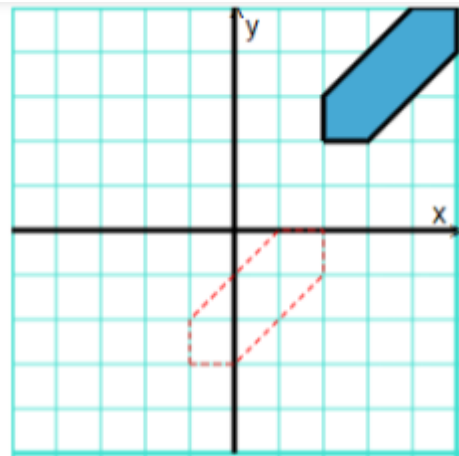
St Paul's School

FOUNDED 1909

2. Draw the image after translation:

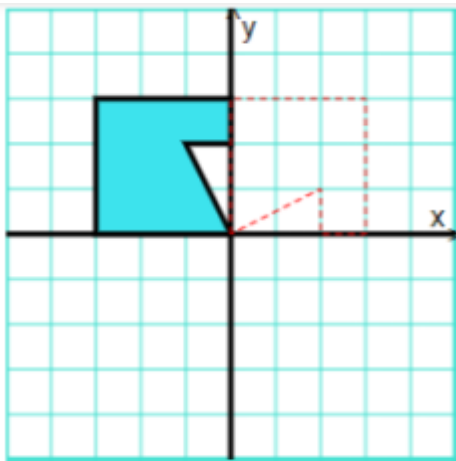


Show the image of the shape above after a translation by moving right 4 units and up 3 units

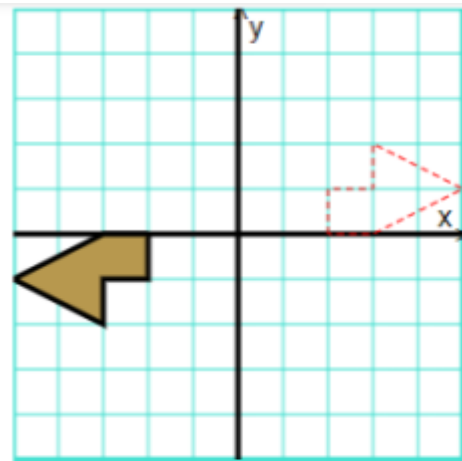


Show the image of the shape above after a translation by moving left 3 units and down 5 units

3. Draw the image after rotation:

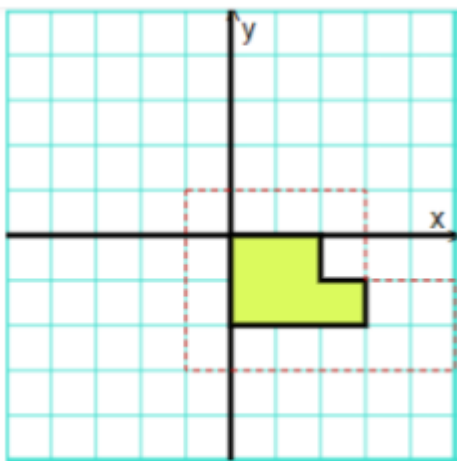


Show the image of the shape above after a rotation of 90° clockwise about the origin.

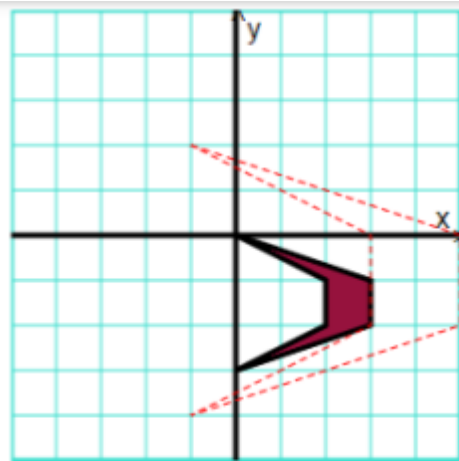


Show the image of the shape above after a rotation of 180° clockwise about the origin.

4. Draw the image after enlargement:



Show the image of the shape above after an enlargement of scale factor 2 if $(1, -1)$ is the centre of enlargement.



Show the image of the shape above after an enlargement of scale factor 2 if $(1, -2)$ is the centre of enlargement.

Puzzle



Puzzle time

Dress 'Addy'

Addy likes red, blue and yellow.

He has a red, a blue and a yellow hat.
He has a red, a blue and a yellow t-shirt and
he has a red, a blue and a yellow pair of
shorts.



How many different ways
can I dress - perhaps I
could start with a red hat,
red shirt and red shorts....

Andy has 3 options for his hat, 3 options for his t-shirt and 3 options for his shorts. Therefore there are $3 \times 3 \times 3 = 27$ ways of dressing Andy!

