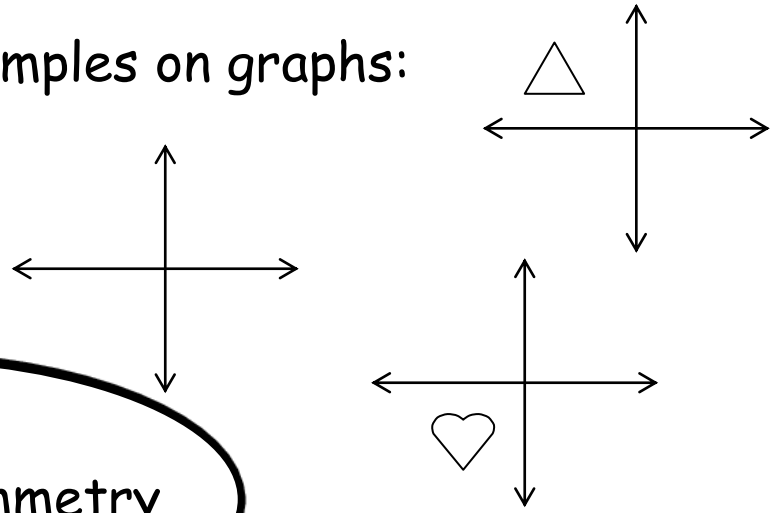
Translation Symmetry

Describe translation in words:

(x + 3), (y – 5) translate ___ units _____
and ___ units _____

(x – 1), (y + 4) translate ___ units _____
and ___ units _____

Examples on graphs:



2 examples using variables:

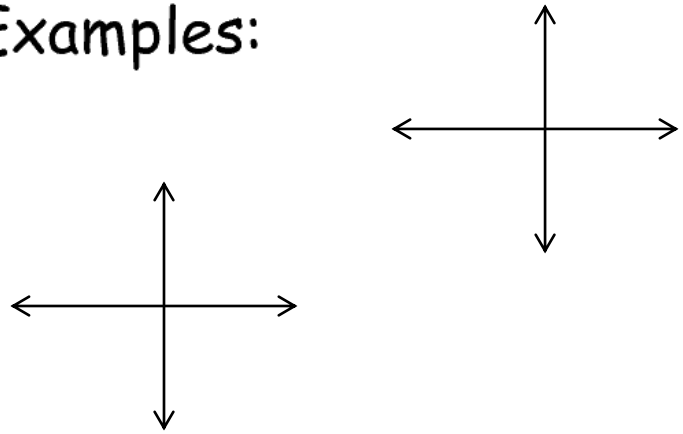
6 units to the left and 1 unit up:

(x, y) → (x _____, y_____)

3 units down and 4 units to the right:

(x, y) → (x _____, y_____)

Non-Examples:



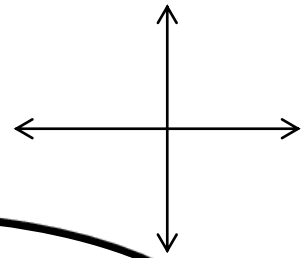
Reflective Symmetry

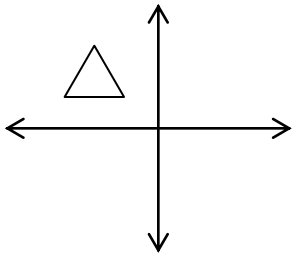
Describe points in words:

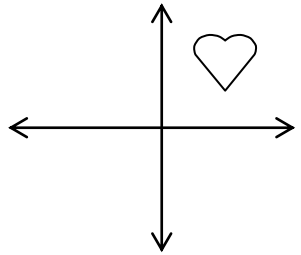
Over the x-axis: the __-coordinates stay the same and the ___-coordinates become the _____.

Over the y-axis: the ___-coordinates stay the same and the ___-coordinates become the _____.

Examples on graphs:







2 examples using variables:

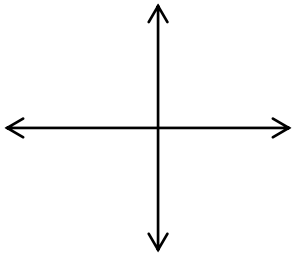
Over the y-axis:

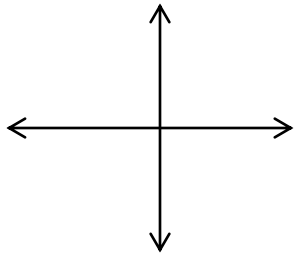
(x, y) → (x___, y)

Over the x-axis:

(x, y) → (x, y___)

Non-Examples:



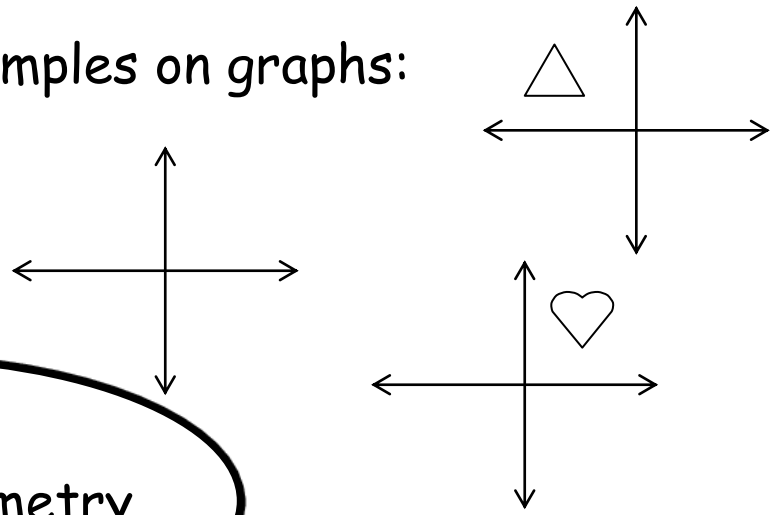


Describe in words:

90° clockwise about the origin, the x and y-coordinates _____ and the ___ and ___-coordinates take on the sign of the _____

_____

Examples on graphs:



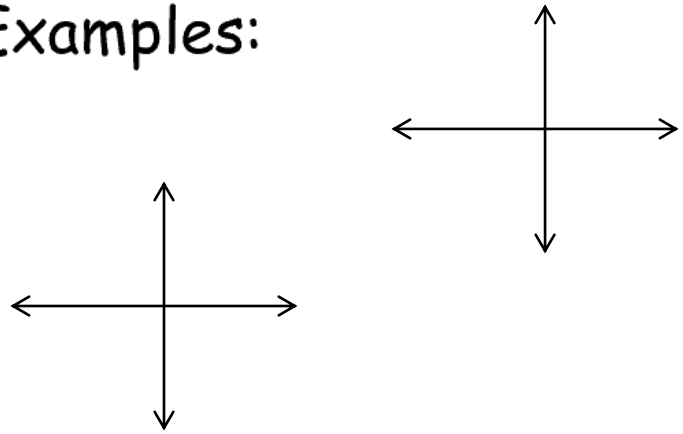
Rotation Symmetry

2 examples using variables:

180° (x, y) → (__x, __y)

360° (x, y) → (__x, __y)

Non-Examples:



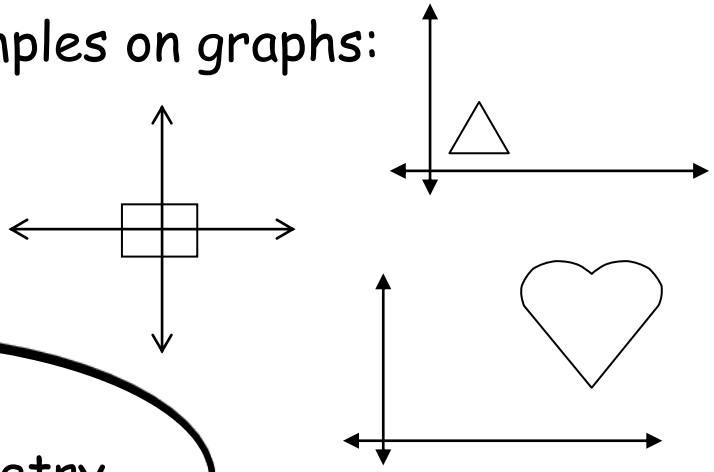
Describe in words:

To find the new points in a dilation,

_____ the coordinates of each

point by the _____

Examples on graphs:



Dilation Symmetry

2 examples using variables:

By a scale factor of 7:

$(x, y) \rightarrow (\_\_x, \_\_\_y)$

By a scale factor of $\frac{1}{4}$:

$(x, y) \rightarrow (\_\_x, \_\_\_y)$

Non-Examples: