

# Transformation Rules Summary Sheet

## TRANSLATIONS

- Move left a # of spaces  $(x, y) \rightarrow (x - a, y)$
- Move right a # of spaces  $(x, y) \rightarrow (x + a, y)$
- Move down a # of spaces  $(x, y) \rightarrow (x, y - a)$
- Move up a # of spaces  $(x, y) \rightarrow (x, y + a)$

## REFLECTIONS

- Reflected over the x-axis  $(x, y) \rightarrow (x, -y)$
- Reflected over the y-axis  $(x, y) \rightarrow (-x, y)$

## ROTATIONS

- Rotate  $90^\circ$  CC  $(x, y) \rightarrow (-y, x)$
- Rotate  $180^\circ$   $(x, y) \rightarrow (-x, -y)$
- Rotate  $270^\circ$  CC  $(x, y) \rightarrow (y, -x)$

## DILATIONS

- Dilated by a scale factor of #  $k$   $(x, y) \rightarrow (kx, ky)$