TRANSFORMATION RULES

Tanslations – slide

T(x, y) → (x±a, y±b) a and **b** are horizontal and vertical shifts

If shift is right, then **a** is positive
If shift is left, then **a** is negative
If shift is up, then **b** is positive
If shift is down, then **b** is negative

Reflections – flip

Over the x-axis: **(x, y) → (x, -y)**

Over the y-axis: **(x, y) → (-x, y)**

Over the line y=x: **(x, y) → (y, x)**

Rotations - turn

CCW 90° CW 270° **(x, y) → (-y, x)**

CW 90° CCW 270° **(x, y) → (y, -x)**

180° (half turn) **(x, y) → (-x, -y)**

360° (full turn) **(x, y) → (x, y)**

Dilations – enlargement or reduction

(x, y) → (cx, cy)

If dilate by a magnitude **0<c<1**, then an image is a reduction
If dilate by a magnitude **c>1**, then an image is an enlargement