Reflections

★ Reflection: a flip across an axis or line on the coordinate plan.

Reflect across the x-axis: change the sign of the y-value

$(x, y) \rightarrow (x, -y)$

EX: C (-2, 4) → C' (-2, -4)
A (0, -8) → A' (0, 8)
T (-3, 5) → T' (-3, -5)

Reflect across the y-axis: change the sign of the x-value

$(x, y) \rightarrow (-x, y)$

EX: H (1, 2) → H' (-1, 2)
A (-3, -5) → A' (3, -5)
T (4, -1) → T' (-4, -1)

Reflect across the line y=x: swith x & y

$(x, y) \rightarrow (y, x)$

EX: B(-7, -12) → B' (-12, -7)
A(8, -2) → A' (-2, 8)
T(9, 13) → T' (13, 9)

Reflect across the line $y = -x$: switch x & y & change both their signs.

$*(x, y) \rightarrow (-y, -x)*$

Ex:

$W(13, 21) \rightarrow W'(-21, -13)$

$E(-2, 9) \rightarrow E'(-9, 2)$

$B(17, -24) \rightarrow B'(24, -17)$

Reflect across $y = \#$ (horizontal line) or $x = \#$ (vertical line): count the spaces to the line and mirror those spaces on the other side of the line.

How many lines of symmetry does each shape have?