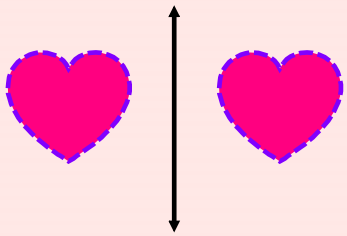
Reflections



line of reflection

A reflection flips a point across a line so that the point and its reflection are the same distance from the line.

When the reflection line is an axis in the coordinate plane, the points have a special relationship.

Reflections Across the y-axis: Opposite x/Same y

(x, y) -> (-x, y)

Example: (2, 3) -> (-2, 3)

Reflections Across the x-axis: Same x/Opposite y

(x, y) -> (x, -y)

Example: (4, -5) -> (4, 5)

Reflections Across Both Axis: Opposite x/Opposite y

(x, y) -> (-x, -y)

Example: (6, 1) -> (-6, -1)

Example : Determine whether the points are reflections across an axis. If yes, state whether the reflection is across the x-axis, y-axis, or both.

1.) (2, 9) and (-2, 9)

y-axis

2.) (1.5, 3.4) and (1.5, -3.4)

x-axis

3.) (1, 3) and (-1, 2)

none

4.) (-1.5, 2.1) and (1.5, -2.1)

both

5.) (26, 0.4) and (-26, 0.4)

y-axis

6.) (3, 1) and (-3, -5)

both

Example : For each point, write the location of its reflection point across the x-axis. same x / opposite y

7.) (5, -6) (5, 6)

8.) (-3.5, 8.4) (-3.5, -8.4)

9.) (-0.7, -0.3) (-0.7, 0.3)

10.) (25, -7) (25, 7)

Example : For each point, write the location of its reflection point across the y-axis. opposite x / same y

11.) (-4, 7) (4, 7)

12.) (-0.6, -2.1) (0.6, -2.1)

13.) (12.75, -1) (-12.75, -1)

14.) (78, 54) (-78, 54)