**Reflection**

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Reflection over the following mirror lines:

|  |  |  |
| --- | --- | --- |
| **Object** | **Mirror Line** | **Image** |
| Example: (2, -5) |  |  |
| Example:  |  |  |
| Example:  |  |  |
| Example: (-3, 2) |  |  |

**Translation**





Translations without graphing:

Example: Find the image coordinates A(9, -5) with a translation vector of .

Therefore: A’(7, -2)

Example: Find the object coordinates of image A’(-5, 3) with a translation vector of .

 Therefore: A(-11, 1)

Example: Find the translation vector of A(4, -5) with image A’(-8, 7).

 Therefore: T(-4, -12)

**Rotation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Object** | **Angle** | **Direction**  | **Center** | **Image** |
|  | 90o | Clockwise | (0,0) |  |
|  | 90o | Counterclockwise | (0,0) |  |
|  | 180o | Clockwise/Counterclockwise | (0,0) |  |

*To find the Centre of Rotation (COR):*

1. Connect 2 corresponding vertices.

2. Construct a perpendicular bisector.

3. The point in intersection is the COR.

**Enlargement**

*To enlarge each point:*

 where

Example:

 Find the image of enlargement for point .

 A’ =

 =

 = (

 =

*To find the Centre of Enlargement (COE):*

1. Draw lines connecting corresponding

 vertices.

2. The point of intersection is the COE.