6. 3 Leap Frog

A Solidify Understanding Task

Josh is animating a scene in which a troupe of frogs is auditioning for the Animal Channel reality show, "The Bayou's Got Talent". In this scene the frogs are demonstrating their "leap frog" acrobatics act. Josh has completed a few key images in this segment, and now needs to describe the transformations that connect various images in the scene.

For each pre-image/image combination listed below, describe the transformation that moves the pre-image to the final image.

- If you decide the transformation is a rotation, you will need to give the center of rotation, the direction of the rotation (clockwise or counterclockwise), and the measure of the angle of rotation.

- If you decide the transformation is a reflection, you will need to give the equation of the line of reflection.

- If you decide the transformation is a translation you will need to describe the "rise" and "run" between pre-image points and their corresponding image points.

- If you decide it takes a combination of transformations to get from the pre-image to the final image, describe each transformation in the order they would be completed.

<table>
<thead>
<tr>
<th>Pre-image</th>
<th>Final Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>image 1</td>
<td>image 2</td>
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<tr>
<td>image 2</td>
<td>image 3</td>
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<tr>
<td>image 3</td>
<td>image 4</td>
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<tr>
<td>image 1</td>
<td>image 5</td>
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</tr>
<tr>
<td>image 2</td>
<td>image 4</td>
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</tbody>
</table>
Topic: Rotations and Reflections of figures.

In each problem there will be a pre-image and several images based on the given pre-image. Determine which of the images are rotations of the given pre-image and which of them are reflections of the pre-image. If an image appears to be created as the result of a rotation and a reflection then state both. (Compare all images to the pre-image.)

1. 

- Pre-Image
- Image A
- Image B
- Image C
- Image D

2. 

- Pre-Image
- Image A
- Image B
- Image C
- Image D
**SET**

Topic: Reflecting and rotating points.

On each of the coordinate grids there is a labeled point and line. Use the line as a line of reflection to reflect the given point and create its reflected image over the line of reflection.

(Hint: points reflect along paths perpendicular to the line of reflection. Use perpendicular slope!)

3. Reflect point $A$ over line $m$ and label the image $A'$

4. Reflect point $B$ over line $k$ and label the image $B'$

5. Reflect point $C$ over line $l$ and label the image $C'$

6. Reflect point $D$ over line $m$ and label the image $D'$

For each pair of point, $P$ and $P'$ draw in the line of reflection that would need to be used to reflect $P$ onto $P'$. Then find the equation of the line of reflection.

7. 

8.
For each pair of points, draw in the line of reflection that would need to be used to reflect one onto the other. Then find the equation of the line of reflection.

9. 

10. 

GO 
Topic: Slopes of parallel and perpendicular lines and finding slope and distance between two points.

For each linear equation write the slope of a line parallel to the given line.

11. \( y = -3x + 5 \)
12. \( y = 7x - 3 \)
13. \( 3x - 2y = 8 \)

For each linear equation write the slope of a line perpendicular to the given line.

14. \( y = -\frac{2}{7}x + 5 \)
15. \( y = \frac{1}{5}x - 4 \)
16. \( 3x + 5y = -15 \)

Find the slope between each pair of points. Then, using the Pythagorean Theorem, find the distance between each pair of points. You may use the graph to help you as needed.

17. \((-2, -3)\) \((1, 1)\)
   a. Slope: 
   b. Distance: 

18. \((-7, 5)\) \((-2, -7)\)
   a. Slope: 
   b. Distance: