

Name: _____

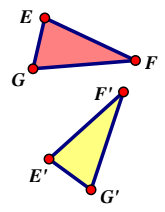
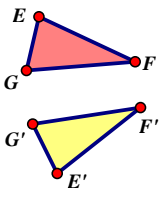
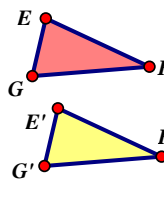
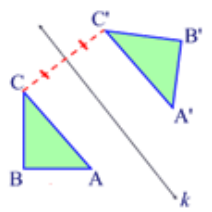
Date: _____

UNIT 2

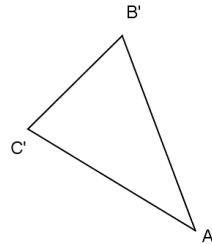
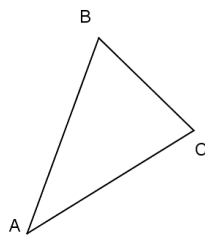
LESSON 3

AIM: HOW DO WE CONSTRUCT REFLECTIONS?

Do Now- Identify each rigid motion.

<p>a) </p> <p>_____</p> <p>Pre-image: _____</p> <p>Image: _____</p>	<p>b) </p> <p>_____</p> <p>Pre-image: _____</p> <p>Image: _____</p>	<p>c) </p> <p>_____</p> <p>Pre-image: _____</p> <p>Image: _____</p>	<p>d) </p> <p>_____</p> <p>Pre-image: _____</p> <p>Image: _____</p>
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Sketch the line of reflection and label it DE.



1. _____

2. _____

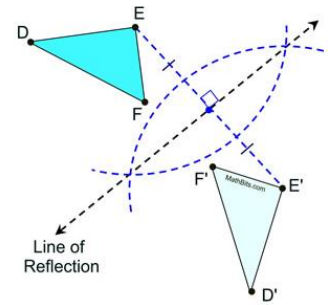
3. _____

4. Notation used for a reflection _____

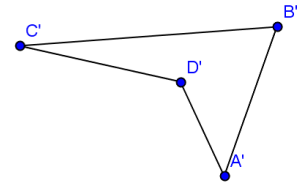
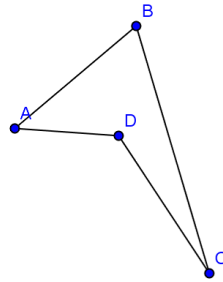
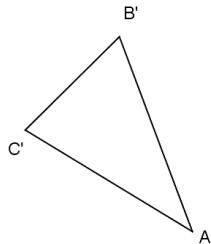
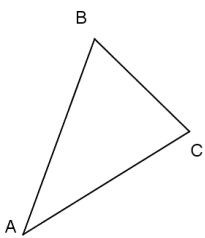
5. Orientation: _____

HOW TO CONSTRUCT THE LINE OF REFLECTION:

1. Connect any vertex of the pre-image to the vertex of its image. For instance, A to A'.
2. Construct the perpendicular bisector of the segment formed.
3. The perpendicular bisector that you created is your line of reflection.

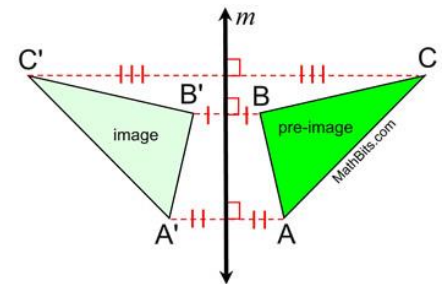


Use your compass and ruler to construct the line of reflection EF .



Properties that are preserved under a **reflection** from pre-image to the image:

1. _____ (lengths of segments are the same)
2. _____ (angles stay the same)
3. _____ (things that were parallel are still parallel)
4. _____ (points on a line, remain on the line)

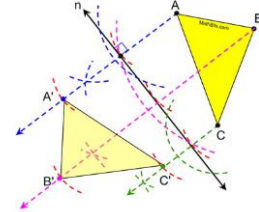
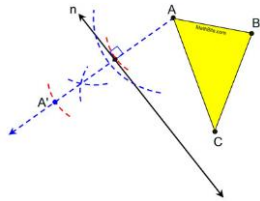
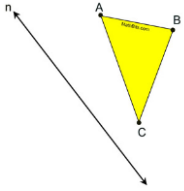


In this reflection that maps ΔABC to $\Delta A'B'C'$, the distances from the pre-image points to the image points vary (are not necessarily equal), but the segments representing these distances are **parallel**.

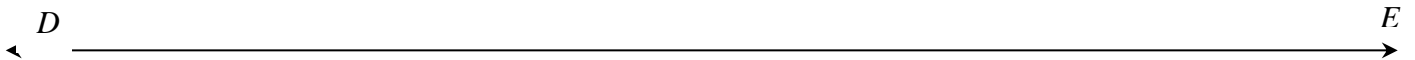
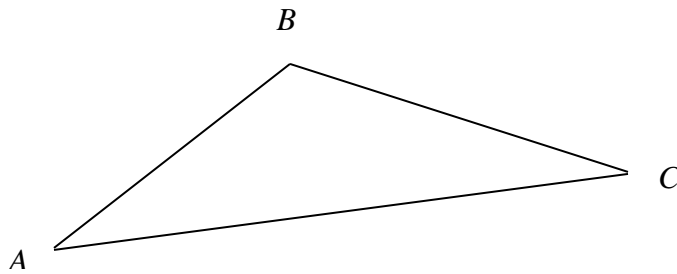
CONCLUSION:

How to construct the reflected image when given a line of reflection and the pre-image:

1. Choose a starting vertex (A).
2. Construct a perpendicular bisector from A to the line of reflection.
3. Measure the length of A to the intersection point.
4. Copy this length on the perpendicular bisector starting at the intersection point to find A'. (You have located one of the vertices of the image.)
5. Repeat this step for each of the vertices.



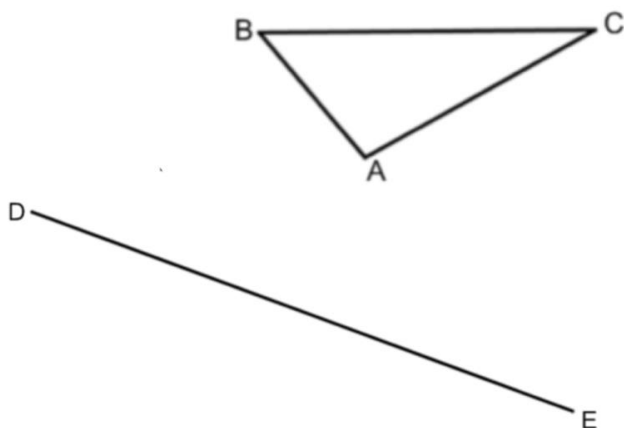
1. Construct the reflection of $\triangle ABC$ over line DE .

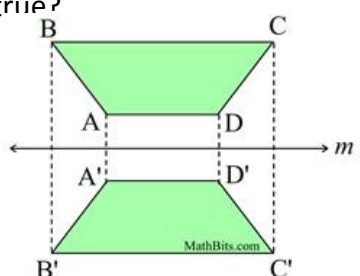


(a) What can you say about the image and its pre-image? _____

6. Is orientation preserved? _____

2. Construct $\Delta A'B'C'$ the image of ΔABC after a reflection across \overline{DE} .



<p>3. A line reflection preserves:</p> <p>(1) distance and orientation</p> <p>(2) angle measurement and orientation</p> <p>(3) distance, but not angle measurement</p> <p>(4) distance and angle measurement</p>	<p>4. $ABCD$ is reflected in line m. Which of the statements is NOT true?</p> <p>5. $\overline{BB'} \parallel \overline{CC'}$</p> <p>6. $\overline{DD'} \perp m$</p> <p>7. $\overline{AB} \parallel \overline{A'B'}$</p> <p>8. $\overline{BC} \cong \overline{B'C'}$</p> 
<p>12. \overline{AB} is reflected to create image $\overline{A'B'}$. Which statement is always true?</p> <p>(1) $A'A = B'B$</p> <p>(2) $AB = A'B'$</p> <p>(3) $\overline{AB} \perp \overline{A'B'}$</p> <p>(4) $\overline{AA'} \perp \overline{BB'}$</p>	
<p>13. ΔABC is reflected to create image $\Delta A'B'C'$. Which statement is always true?</p> <p>(1) $\overline{AB} \parallel \overline{A'B'}$</p> <p>(2) $\overline{AA'} \perp \overline{BB'}$</p> <p>(3) $\overline{AB} \perp \overline{A'B'}$</p> <p>(4) $\overline{AA'} \parallel \overline{BB'}$</p>	

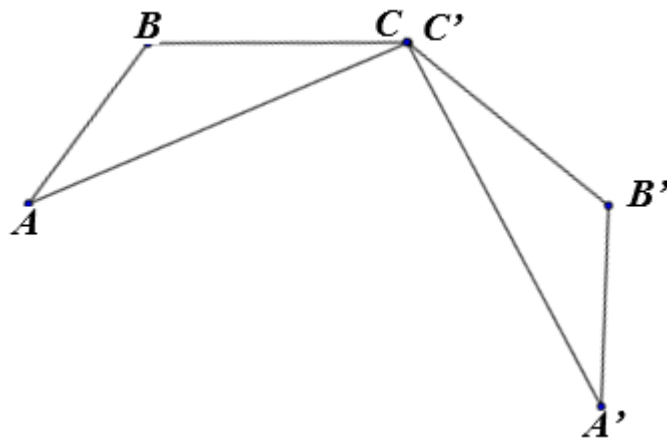
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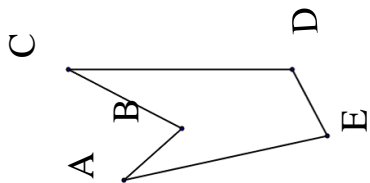
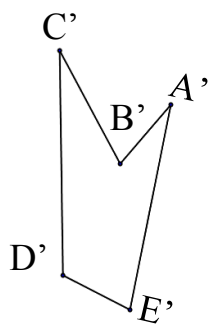
UNIT 2

LESSON 3 HOMEWORK

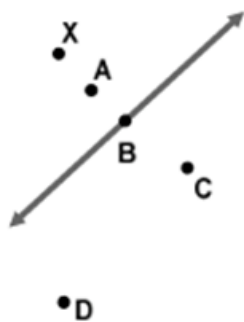
1. Construct the line of reflection for the figure below and label it \overline{DE} .



2. Construct the line of reflection for the figures below.



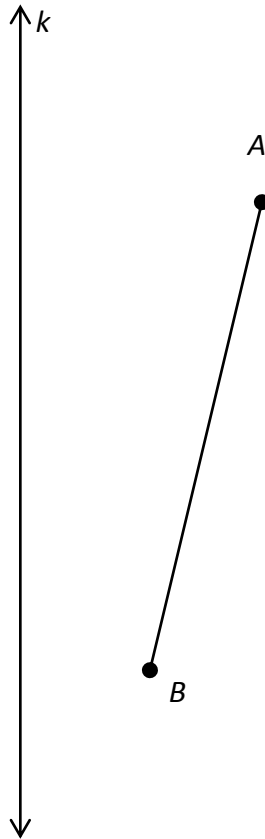
3. Which point represents the reflection of X?



4. Which point represents the reflection of D?

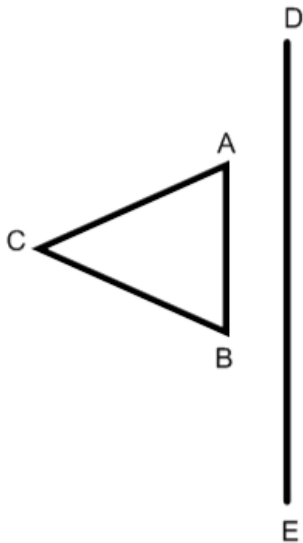


5) Construct the reflection of \overline{AB} over line k .



B) Why is $\overline{A'B'}$ an example of a rigid motion? _____

6. Use your compass and straightedge $r_{DE}(DABC)$ *Hint: Extend the line if need be...



7. Watch the video on how to construct a translation (https://www.youtube.com/watch?v=XS_XXo0-dIE) and follow along here:

