Sec 2.5 Geometry – Congruence

Any two congruent figures can be mapped onto one another using a series of rigid or isometric transformation (reflections, rotations, and translations). – See GSP Lab (Transformations) –

Each of the following pairs of figures shown below are congruent. Write a congruence statement for each and tell whether or not a reflection would be needed to map the pre-image onto the image.

1. 

2. 

3. 

4. 

Given the following congruencies find the requested unknown angle.

5. $\triangle ABC \cong \triangle ONM$

$m \angle MNO = \phantom{0}$

6. $\triangle GEM \cong \triangle TOR$

$m \angle GEM = \phantom{0}$

M. Winking

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Given the following congruencies find the requested unknown side.

7. \( \triangle TRI \cong \triangle ANG \)

8. \( \triangle MTH \cong \triangle FUN \)

\[ GN = \]

\[ UF = \]

The following pairs of triangles are congruent. Provide a suggested transformation or series of transformations that can map one triangle onto the other congruent triangle. *(In each diagram \( \triangle ABC \cong \triangle DEF \))

9. 

10. 

11. 

12. 

<table>
<thead>
<tr>
<th>Circle which transformation(s) could be used to map ( \triangle ABC ) onto ( \triangle DEF )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translation</td>
</tr>
<tr>
<td>Rotation</td>
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Angle Puzzles. (angles are not drawn to scale)

9. Find $m\angle BCE$

Given:
- $\overline{AC}$ bisects $\angle DAB$
- $m\angle DAB = 50^\circ$
- $\angle ABC$ is a right angle

10. Find $m\angle GFH$

Given:
- $\overline{GH}$ bisects $\angle FGI$
- $m\angle FGI = 60^\circ$
- $m\angle GHI = 75^\circ$
- $\angle FHI$ is a right angle

$m\angle BCE = \ldots$

$m\angle GFH = \ldots$