Geometry 4.4-4.6 Worksheet

1. Refer to the figure shown. Which of the following statements is true?

   \[ \overline{TV} \equiv \overline{WV} \quad \overline{UV} \equiv \overline{XV} \]

   a. \( \triangle TUV \equiv \triangle XWV \) by ASA  
   b. \( \triangle TUV \equiv \triangle VWX \) by SAS  
   c. \( \triangle TUV \equiv \triangle WXV \) by SAS  
   d. \( \triangle TUV \equiv \triangle WXV \) by SSS

2. State two postulates or theorems that can be used to conclude that \( \triangle AOB \equiv \triangle COD \).

3. Can you use the SAS Congruence Postulate to prove that the two triangles are congruent? Explain your reasoning.

4. Identify the congruent triangles. How do you know they are congruent?

5. Would HL, ASA, SAS, AAS, or SSS be used to justify that the pair of triangles is congruent?

6.

7.
Tell which method(s) you can use to prove that the triangles are congruent. If no method can be used, write none.

13. Given: $AB \cong DE$
   $\angle B \cong \angle E$
   Prove: $\triangle ABC \cong \triangle DEC$

14. Complete the reasons of this proof.
   Given: $AE \parallel DC; AB \cong DB$
   Prove: $\triangle ABE \cong \triangle DBC$

<table>
<thead>
<tr>
<th>Statements</th>
<th>Reasons</th>
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<tbody>
<tr>
<td>$AE \parallel DC; AB \cong DB$</td>
<td>1.</td>
</tr>
<tr>
<td>$\angle A \cong \angle D$</td>
<td>2.</td>
</tr>
<tr>
<td>$\angle ABE \cong \angle DBC$</td>
<td>3.</td>
</tr>
<tr>
<td>$\triangle ABE \cong \triangle DBC$</td>
<td>4.</td>
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</tbody>
</table>
15. Find the length of $\overline{LM}$. State the postulate or theorem you use.

Line $l$ is the perpendicular bisector of $\overline{MN}$.

16. Find the value of $x$.

17. Use the measurements given in the diagram to find the distance $x$ across the river.

18. Given: $\angle BAC \cong \angle DAC$, $\angle B \cong \angle D$  
Prove: $BC \cong DC$

19. Given: $\angle BAC \cong \angle DAC$, $\angle B \cong \angle D$  
Prove: $BC \cong DC$

20. Explain how you can prove that the hypotenuses of the right triangles $\triangle ABC$ and $\triangle DCB$ are congruent.