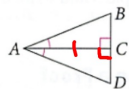


1.

Given: $\angle BAC \cong \angle DAC$, $\overline{AC} \perp \overline{BD}$

Prove: $\triangle ABC \cong \triangle ADC$

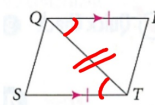


Statements	Justifications
$\angle BAC \cong \angle DAC$	Given
$\overline{AC} \perp \overline{BD}$	Given
$\angle ACB \cong \angle ACD$	Definition of perpendicular
$\angle ACB \cong \angle ACD$	All rt $\angle$ s are $\cong$
$\overline{AC} \cong \overline{AC}$	Reflexive prop
$\triangle ABC \cong \triangle ADC$	ASA

2.

Given: $\overline{QR} \cong \overline{TS}$, $\overline{QR} \parallel \overline{TS}$

Prove: $\triangle QRT \cong \triangle TSQ$

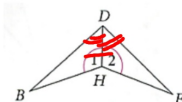


Statements	Justifications
$\overline{QR} \cong \overline{TS}$	Given
$\overline{QR} \parallel \overline{TS}$	Given
$\angle RQT \cong \angle STQ$	Alternate Interior angles
$\overline{QT} \cong \overline{QT}$	Reflexive prop
$\triangle QRT \cong \triangle TSQ$	SAS

3.

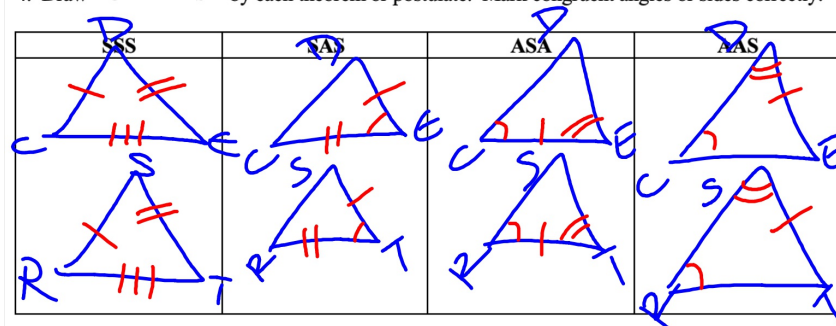
Given: $\overline{DH}$ bisects $\angle BDF$, $\angle 1 \cong \angle 2$

Prove: $\triangle BDH \cong \triangle FDH$



Statements	Justifications
$\overline{DH}$ bisects $\angle BDF$	Given
$\angle BDH \cong \angle FDH$	Definition of bisector
$\angle 1 \cong \angle 2$	Given
$\overline{DH} \cong \overline{DH}$	Reflexive Property
$\triangle BDH \cong \triangle FDH$	ASA

4. Draw $\triangle CDE \cong \triangle RST$ by each theorem or postulate. Mark congruent angles or sides correctly.

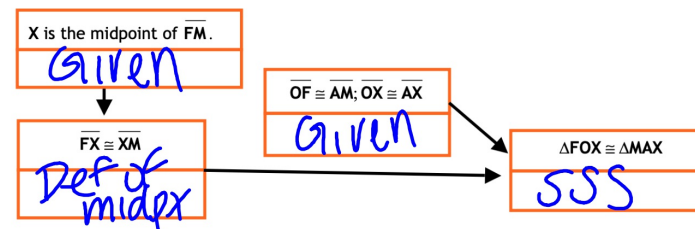
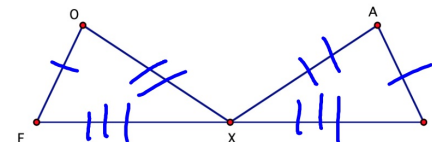


1. What are the four shortcuts you can use to prove two triangles congruent?

$\left. \begin{array}{l} \text{SSS} \\ \text{SAS} \\ \text{ASA} \\ \text{AAS} \\ \text{HL} \end{array} \right\} \text{prove } \cong$
 $\left. \begin{array}{l} \text{SSA} \\ \text{AAA} \end{array} \right\} \text{don't prove } \cong$

2. **REINFORCE** In the following proof, the statements have been filled in for you. Write the reason in the blank below each statement.

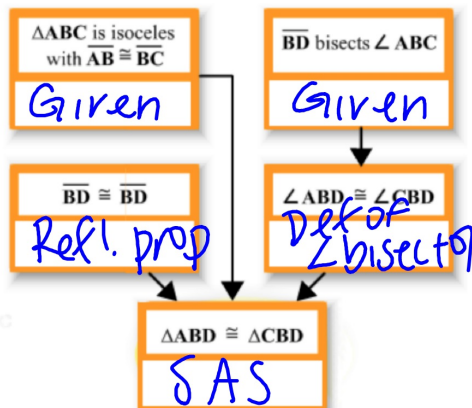
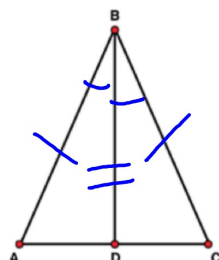
Given: X is the midpoint of $\overline{FM}$;
 $\overline{OF} \cong \overline{AM}$; $\overline{OX} \cong \overline{AX}$.
 Prove: $\triangle FOX \cong \triangle MAX$



3. Complete the following proof by filling in the blanks in the flow chart.

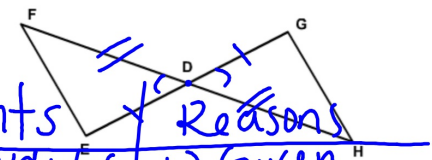
Given: ① $\triangle ABC$ with $\overline{AB} \cong \overline{BC}$,
 and ② $\overline{BD}$ is the angle bisector of $\angle B$.

Prove: $\triangle ABD \cong \triangle CBD$



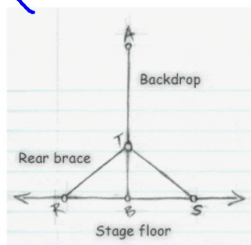
4. Write a proof of $\triangle FDE \cong \triangle HDG$, including all the statements and reasons.

Given: D is the midpoint of
 both $\overline{GE}$ and $\overline{FH}$.
 Prove: $\triangle FDE \cong \triangle HDG$



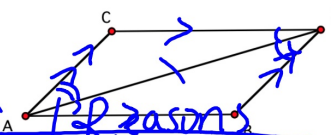
Statements	Reasons
1.) D is the midpt of $\overline{GE}/\overline{FH}$	1.) Given
2.) $\overline{FD} \cong \overline{DH}$ $\overline{GD} \cong \overline{DE}$	2.) Def of mid
3.) $\angle FDE \cong \angle HDG$	3.) Vertical $\angle$ s
4.) $\triangle FDE \cong \triangle HDG$	4.) SAS

5. How should the students go about placing the braces on the theater backdrop to ensure that $\triangle RTB \cong \triangle STB$? Justify your reasoning.



6. **REINFORCE** Write a proof of $\triangle ABD \cong \triangle DCA$. You may write a paragraph proof, a flow-chart proof, or a two-column proof.

Given: $\overline{AC} \parallel \overline{BD}$; $\overline{CD} \parallel \overline{AB}$
 Prove: $\triangle ABD \cong \triangle DCA$



Statements	Reasons
① $\overline{AC} \parallel \overline{BD}$; $\overline{CD} \parallel \overline{AB}$	① Given
② $\angle CAD \cong \angle BDA$; $\angle CDA \cong \angle ABD$	② Alt int $\angle$ s
③ $\overline{AD} \cong \overline{AD}$	③ Refl prop
④ $\triangle ABD \cong \triangle DCA$	④ ASA

Hwk #32 - SSS & SAS Practice w/ Proofs