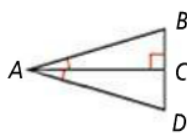
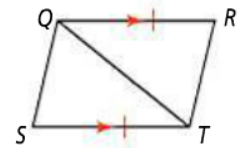


**11. Given:**  $\angle BAC \cong \angle DAC$ ,  
**Proof**  $\overline{AC} \perp \overline{BD}$   
**Prove:**  $\triangle ABC \cong \triangle ADC$



$\angle BAC \cong \angle DAC$  Given  
 $\overline{AC} \perp \overline{BD}$   
 $\angle BCA \cong \angle DCA$  All right Angles are congruent  
 $\overline{AC} = \overline{AC}$  Reflexive  
 $\triangle ABC \cong \triangle ADC$  ASA

**12. Given:**  $\overline{QR} \cong \overline{TS}$ ,  
**Proof**  $\overline{QR} \parallel \overline{TS}$   
**Prove:**  $\triangle QRT \cong \triangle TSQ$

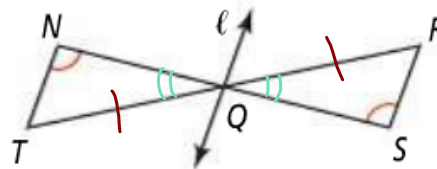


$\overline{QR} \cong \overline{TS}$  Given  
 $\overline{QR} \parallel \overline{TS}$  Given  
 $\angle RQT \cong \angle STQ$  Alternate Interior Angles  
 $\overline{QT} \cong \overline{QT}$  Reflexive  
 $\triangle QRT \cong \triangle TSQ$  SAS

Oct 18-2:36 PM

**13. Developing Proof** Complete the two-column proof by filling in the blanks.

**Given:**  $\angle N \cong \angle S$ ,  
 line  $\ell$  bisects  $\overline{TR}$  at  $Q$   
**Prove:**  $\triangle NQT \cong \triangle SQR$



Statements	Reasons
1) $\angle N \cong \angle S$	1) Given
2) $\angle NQT \cong \angle SQR$	2) a. ? Vertical Angles Theorem
3) Line $\ell$ bisects $\overline{TR}$ at $Q$ .	3) b. ? Given
4) c. ?	4) Definition of bisect
5) $\triangle NQT \cong \triangle SQR$	5) d. ? AAS

Oct 18-2:38 PM

**14. Given:**  $\angle V \cong \angle Y$ ,  
**Proof**  $\overline{WZ}$  bisects  $\angle VWY$   
**Prove:**  $\triangle VWZ \cong \triangle YWZ$

$\angle V \cong \angle Y$   
 $\overline{WZ}$  bisects  $\angle VWY$  Given  
 $\angle VWZ \cong \angle YWZ$  Definition of bisect  
 $\overline{WZ} \cong \overline{WZ}$  Reflexive  
 $\triangle VWZ \cong \triangle YWZ$  AAS

**15. Given:**  $\overline{PQ} \perp \overline{QS}$ ,  $\overline{RS} \perp \overline{SQ}$ ,  
**Proof**  $T$  is the midpoint of  $\overline{PR}$   
**Prove:**  $\triangle PQT \cong \triangle RST$

$\overline{PQ} \perp \overline{QS}$   
 $\overline{RS} \perp \overline{SQ}$  Given  
 $T$  is midpoint of  $\overline{PR}$   
 $\angle Q \cong \angle S$  Right Angles are congruent  
 $\overline{PT} \cong \overline{TR}$  Definition of midpoint  
 $\angle PTQ \cong \angle RTS$  Vertical Angles Theorem  
 $\triangle PQT \cong \triangle RST$  AAS

Oct 18-2:38 PM

Determine whether the triangles must be congruent. If so, name the postulate or theorem that justifies your answer. If not, explain. See Problem 4.

16.

Yes  
ASA

17.

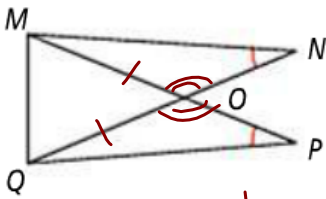
Yes  
AAS

18.

Yes  
AAS

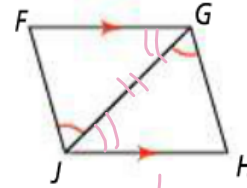
Oct 18-2:39 PM

19. **Given:**  $\angle N \cong \angle P, \overline{MO} \cong \overline{QO}$   
**Proof** **Prove:**  $\triangle MON \cong \triangle QOP$



$\angle N \cong \angle P$   
 $\overline{MO} \cong \overline{QO}$       Given  
 $\angle MON \cong \angle QOP$       Vertical Angles Theorem  
 $\triangle MON \cong \triangle QOP$       AAS

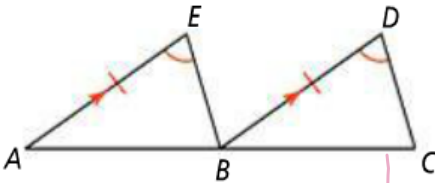
20. **Given:**  $\angle FJG \cong \angle HJG, \overline{FG} \parallel \overline{JH}$   
**Proof** **Prove:**  $\triangle FGJ \cong \triangle HJG$



$\angle FJG \cong \angle HJG$       Given  
 $\overline{FG} \parallel \overline{JH}$       Given  
 $\angle FGJ \cong \angle HJG$       Alternate Interior Angles  
 $\overline{JG} \cong \overline{JG}$       Reflexive  
 $\triangle FGJ \cong \triangle HJG$       ASA

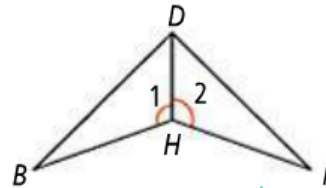
Oct 18-2:39 PM

25. **Given:**  $\overline{AE} \parallel \overline{BD}, \overline{AE} \cong \overline{BD},$   
 $\angle E \cong \angle D$   
**Proof** **Prove:**  $\triangle AEB \cong \triangle BDC$



$\overline{AE} \parallel \overline{BD}, \overline{AE} \cong \overline{BD}$       Given  
 $\angle E \cong \angle D$   
 $\angle A \cong \angle DBC$       Corresponding Angles  
 $\triangle AEB \cong \triangle BDC$       ASA

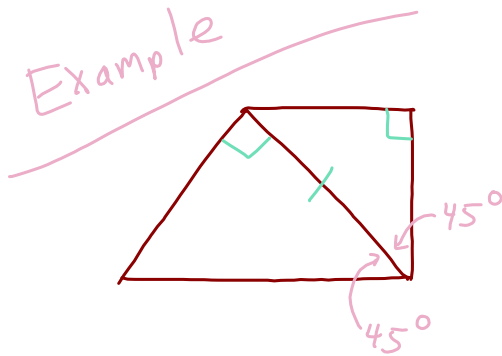
26. **Given:**  $\angle 1 \cong \angle 2,$  and  
 $\overline{DH}$  bisects  $\angle BDF.$   
**Proof** **Prove:**  $\triangle BDH \cong \triangle FDH$



$\angle 1 \cong \angle 2$       Given  
 $\overline{DH}$  bisects  $\angle BDF$   
 $\overline{HD} \cong \overline{HD}$       Reflexive  
 $\angle BDH \cong \angle HDF$       Definition of bisect  
 $\triangle BDH \cong \triangle FDH$       ASA

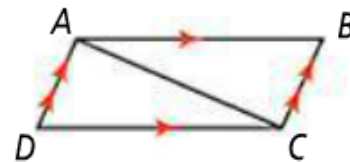
Oct 18-2:39 PM

27. **Draw a Diagram** Draw two noncongruent triangles that have two pairs of congruent angles and one pair of congruent sides.



Oct 18-2:39 PM

28. **Given:**  $\overline{AB} \parallel \overline{DC}, \overline{AD} \parallel \overline{BC}$   
**Proof** **Prove:**  $\triangle ABC \cong \triangle CDA$



$\overline{AB} \parallel \overline{DC}, \overline{AD} \parallel \overline{BC}$ $\angle ACB \cong \angle CAD$ $\angle ACD \cong \angle BAC$ $\overline{AC} \cong \overline{AC}$ $\triangle ABC \cong \triangle CDA$	Given Alternate Interior Reflexive ASA
--	---

Oct 18-2:39 PM