

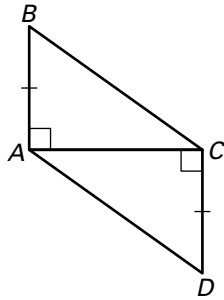
LESSON 4.6

Practice B

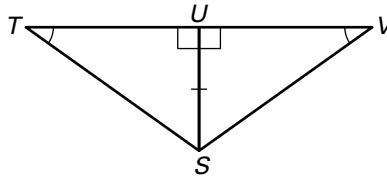
For use with pages 268–275

Tell which triangles you can show are congruent in order to prove the statement. What postulate or theorem would you use?

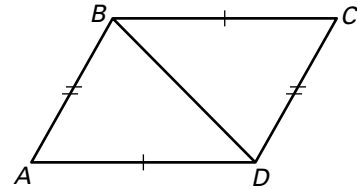
1. $\overline{BC} \cong \overline{AD}$



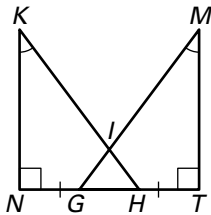
2. $\angle TSU \cong \angle VSU$



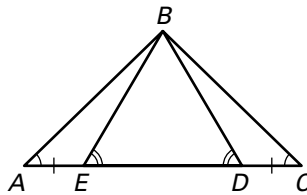
3. $\angle ADB \cong \angle CBD$



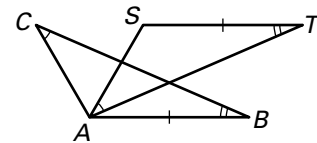
4. $\angle KHN \cong \angle MGT$



5. $\overline{BD} \cong \overline{BE}$

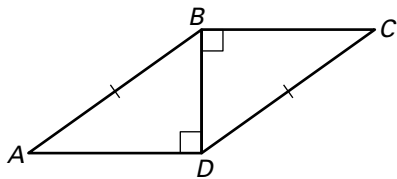


6. $\overline{BC} \cong \overline{AT}$

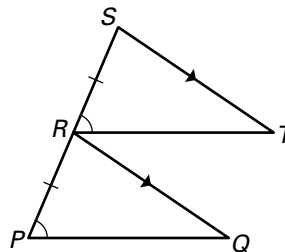


Use the diagram to write a plan for a proof.

7. PROVE: $\angle DAB \cong \angle BCD$



8. PROVE: $\overline{ST} \cong \overline{RQ}$



Use the vertices of $\triangle ABC$ and $\triangle DEF$ to show that $\angle A \cong \angle D$.

Explain your reasoning.

9. $A(1, 2), B(4, -3), C(2, 5), D(4, 7), E(7, 2), F(5, 10)$

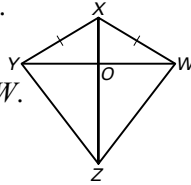
10. $A(2, 3), B(2, 9), C(6, 6), D(8, 5), E(8, 11), F(12, 8)$

LESSON
4.6

Practice B *continued*
For use with pages 268–275

11. Proof Complete the proof.

GIVEN: $\overline{YX} \cong \overline{WX}$
 \overline{ZX} bisects $\angle YXW$.

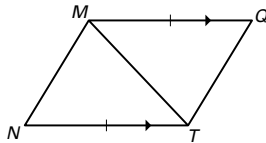


PROVE: $\overline{YZ} \cong \overline{WZ}$

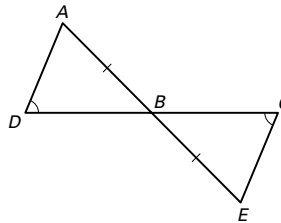
Statements	Reasons
1. $\overline{YX} \cong \overline{WX}$	1. ?
2. \overline{ZX} bisects $\angle YXW$.	2. ?
3. $\angle YXZ \cong \angle WXZ$	3. ?
4. $\overline{XZ} \cong \overline{XZ}$	4. ?
5. $\triangle YXZ \cong \triangle WXZ$	5. ?
6. $\overline{YZ} \cong \overline{WZ}$	6. ?

Use the information given in the diagram to write a proof.

12. PROVE: $\overline{MN} \cong \overline{TQ}$



13. PROVE: $\overline{DB} \cong \overline{CB}$



14. Refer to the construction on page 174 of your textbook. Complete the proof to justify that the construction for parallel lines is valid.

GIVEN: $\angle AQB \cong \angle CPD$

PROVE: $\overline{PD} \parallel$ line m

Statements	Reasons
1. $\angle AQB \cong \angle CPD$	1. ?
2. $\angle AQB$ and $\angle CPD$ are corresponding angles.	2. ?
3. $\overline{PD} \parallel$ line m	3. ?

Lesson 4.6, continued

15.

Statements	Reasons
1. $\overline{VW} \parallel \overline{XU}$, $\angle VUW$ and $\angle XWU$ are right angles.	1. Given
2. $\overline{UW} \cong \overline{WU}$	2. Reflexive Prop. of Congruence
3. $\angle VUW \cong \angle XWU$	3. All right \sphericalangle s are \cong .
4. $\angle VWU \cong \angle XWU$	4. Alt. Interior Angles Thm.
5. $\triangle UVW \cong \triangle WXU$	5. ASA Congruence Post.
6. $\overline{UV} \cong \overline{WX}$	6. Corr. parts of $\cong \triangle$ s are \cong .

16. Given; AAS Congruence Theorem; Corresponding parts of $\cong \triangle$ s are \cong .

Practice Level B

1. $\triangle ABC \cong \triangle CDA$; SAS
2. $\triangle TSU \cong \triangle VSU$; AAS
3. $\triangle ABD \cong \triangle CDB$; SSS
4. $\triangle NKH \cong \triangle TMG$; AAS
5. $\triangle ABD \cong \triangle CBE$; ASA
6. $\triangle ABC \cong \triangle STA$; AAS

7. Use the HL Congruence Theorem to prove that $\triangle DAB \cong \triangle BCD$. Then use the fact that corresponding parts of congruent triangles are congruent to prove that $\angle DAB \cong \angle BCD$.

8. Because $\overline{ST} \parallel \overline{RQ}$, $\angle PRQ \cong \angle RST$ by the Corresponding Angles Postulate. Use the ASA Congruence Postulate to prove that $\triangle PRQ \cong \triangle RST$. Then use the fact that corresponding parts of congruent triangles are congruent to prove that $\overline{ST} \cong \overline{RQ}$.

9. Use the Distance Formula to find the side lengths of the triangles. Use the SSS Congruence Postulate to show that $\triangle ABC \cong \triangle DEF$. Then use the fact that corresponding parts of congruent triangles are congruent to prove that $\angle A \cong \angle D$.

10. Use the Distance Formula to find the side lengths of the triangles. Use the SSS Congruence Postulate to show that $\triangle ABC \cong \triangle DEF$. Then use the fact that corresponding parts of congruent triangles are congruent to prove that $\angle A \cong \angle D$.

11. Given; Given; Definition of angle bisector; Reflexive Property of Congruence; SAS Congruence Postulate; Corresponding parts of congruent triangles are congruent.

12.

Statements	Reasons
1. $\overline{MQ} \cong \overline{NT}$	1. Given
2. $\overline{MQ} \parallel \overline{NT}$	2. Given
3. $\angle NTM \cong \angle QMT$	3. Alternate Interior Angles Theorem
4. $\overline{MT} \cong \overline{MT}$	4. Reflexive Property of Congruence
5. $\triangle NTM \cong \triangle QMT$	5. SAS Congruence Postulate
6. $\overline{MN} \cong \overline{TQ}$	6. Corresponding parts of congruent triangles are congruent.

13.

Statements	Reasons
1. $\overline{AB} \cong \overline{BE}$	1. Given
2. $\angle ADB \cong \angle ECB$	2. Given
3. $\angle ABD \cong \angle EBC$	3. Vertical Angles Theorem
4. $\triangle ABD \cong \triangle EBC$	4. AAS Congruence Theorem
5. $\overline{DB} \cong \overline{CB}$	5. Corresponding parts of congruent triangles are congruent.

14. Given; Definition of corresponding angles; Corresponding Angles Converse

Practice Level C

1. $\triangle HGL \cong \triangle JKM$; AAS 2. $\triangle PQU \cong \triangle VPS$; AAS 3. $\triangle ABC \cong \triangle DEF$; ASA 4. Use the \cong angles in the linear pairs to show $\angle RZS \cong \angle UYT$. Show $\triangle RSZ \cong \triangle UTY$ by AAS, so $\overline{RZ} \cong \overline{YU}$ because they are corresponding parts.

5. Show $\angle FHG \cong \angle JHI$ because they are vertical. Show $\triangle FGH \cong \triangle JIH$ by AAS, so $\overline{FH} \cong \overline{JH}$ because they are corresponding parts.

6. Show $\angle ADE$ is a right \angle . Use SAS to show $\triangle ADE \cong \triangle CDE$, so by corresponding parts, $\angle AED \cong \angle CED$ and $\overline{AE} \cong \overline{CE}$. Use SAS to show $\triangle ABE \cong \triangle CBE$. So by corresponding parts, $\angle 1 \cong \angle 2$. 7. Show $\triangle HKL \cong \triangle HML$ by ASA, so by corresponding parts, $\angle HKL \cong \angle HML$ and $\overline{HK} \cong \overline{HM}$. Use the congruent angles in the linear pairs to show $\angle HMN \cong \angle HKJ$. By vertical angles, $\angle JHK \cong \angle NHM$. Show $\triangle HJK \cong \triangle HNM$ by ASA, so by corresponding parts, $\angle 1 \cong \angle 2$.

8. Use AAS to show $\triangle ABD \cong \triangle GFD$. Then by corresponding parts $\overline{BD} \cong \overline{FD}$. By vertical angles, $\angle ADB \cong \angle EDF$ and $\angle CDB \cong \angle GDF$. Show