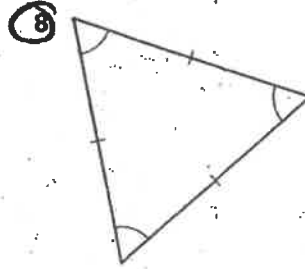
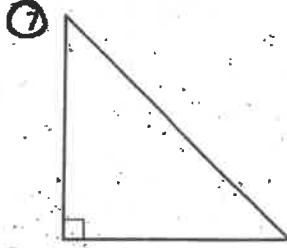
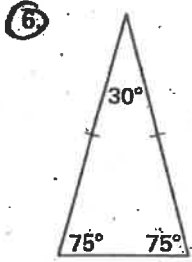
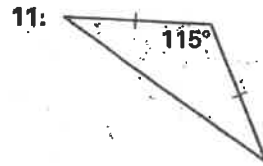
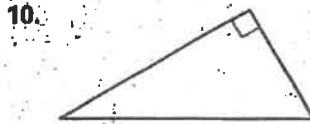
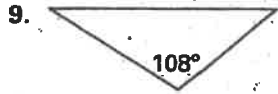


4.1 Practice A

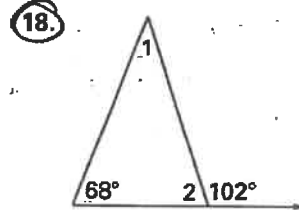
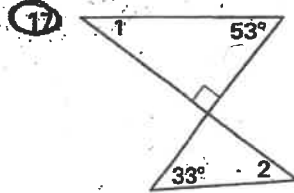
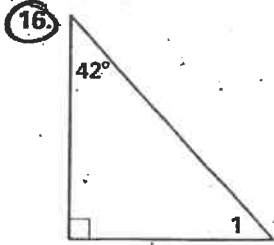
Classify the triangle by its angles and by its sides.



4.1



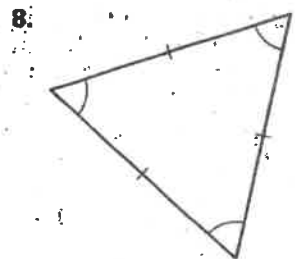
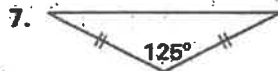
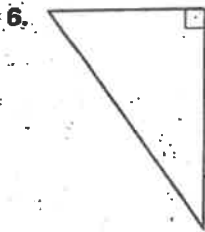
Find the measure of the numbered angle.



4.1 Practice B

Lesson

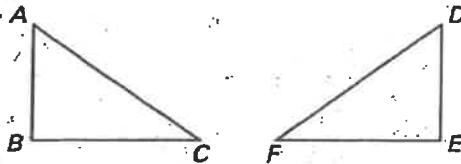
Classify the triangle by its angles and by its sides.



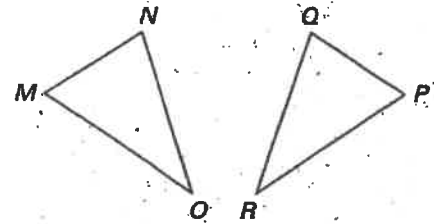
Practice A

For use with pages 202-210

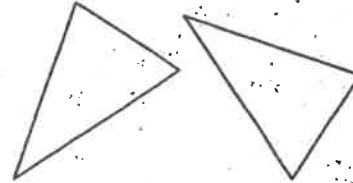
1. Given $\triangle ABC \cong \triangle DEF$, name three pairs of congruent sides.



2. Given $\triangle MNO \cong \triangle PQR$, name three pairs of congruent angles.



3. Copy the congruent triangles shown at the right. Then label the vertices of your triangles so that $\triangle RUV \cong \triangle TNF$. Identify all pairs of congruent corresponding angles and corresponding sides.

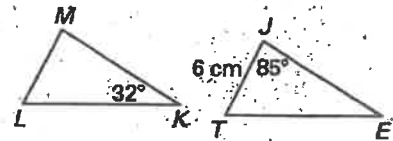


Lesson 4.2

In the diagram, $\triangle MKL \cong \triangle JET$. Complete the statement.

4. $\angle L \cong$ _____
 6. $m\angle M =$ _____
 8. $\overline{ML} \cong$ _____

5. $\overline{MK} \cong$ _____
 7. $m\angle T =$ _____
 9. $\triangle ETJ \cong$ _____



Complete this statement.

10. If $\triangle WRD \cong \triangle PLK$, then $\overline{WR} \cong$ _____
 11. If $\triangle BGT \cong \triangle DSN$, then $\angle T \cong$ _____
 12. If $\triangle SVP \cong \triangle MTQ$, then $\overline{PS} \cong$ _____
 13. If $\triangle JCX \cong \triangle MWP$, then $\overline{XC} \cong$ _____
 14. If $\triangle RHK \cong \triangle WVO$, then $\triangle KRH \cong$ _____
 15. If $\triangle PMC \cong \triangle LDX$, then $\angle M \cong$ _____

LESSON
4.2

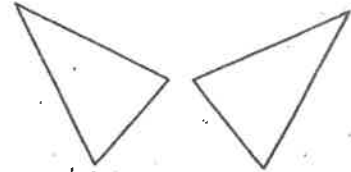
NAME _____

DATE _____

Practice B

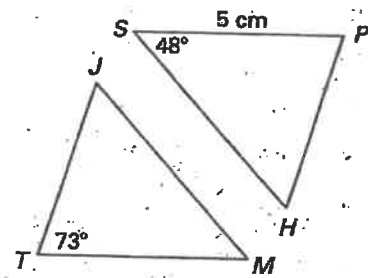
For use with pages 202-210

1. Copy the congruent triangles shown at the right. Then label the vertices of your triangles so that $\triangle AMT \cong \triangle CDN$. Identify all pairs of congruent corresponding angles and corresponding sides.

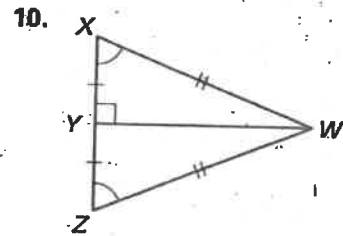
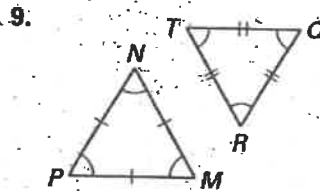
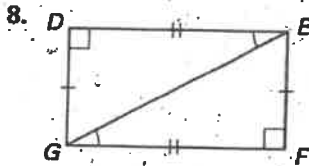


In the diagram, $\triangle TJM \cong \triangle PHS$. Complete the statement.

2. $\angle P \cong$ _____
 3. $\overline{JM} \cong$ _____
 4. $m\angle M =$ _____ $^\circ$
 5. $m\angle P =$ _____ $^\circ$
 6. $\overline{MT} =$ _____
 7. $\triangle HPS \cong$ _____

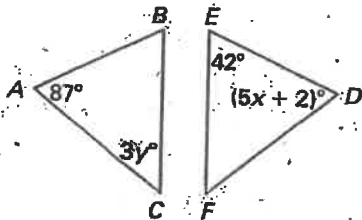


Identify any figures that can be proved congruent. Explain your reasoning. For those that can be proved congruent, write a congruence statement.

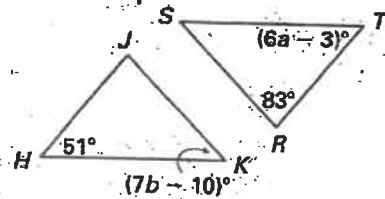


In Exercises 11 and 12, use the given information to find the indicated values.

11. Given $\triangle ABC \cong \triangle DEF$, find the values of x and y .



12. Given $\triangle HJK \cong \triangle TRS$, find the values of a and b .

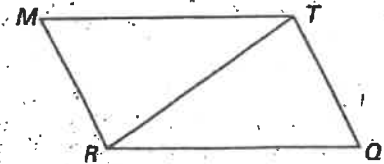


Practice A

For use with pages 212-219

Use the diagram. Name the included angle between the pair of sides given.

1. \overline{MT} and \overline{TR}
2. \overline{TQ} and \overline{RT}
3. \overline{RT} and \overline{MR}
4. \overline{TQ} and \overline{RQ}
5. \overline{MR} and \overline{TM}
6. \overline{RT} and \overline{QR}

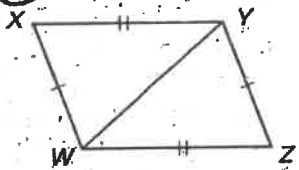


For each pair of congruent triangles, name the pairs of corresponding sides.

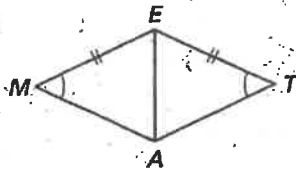
7. $\triangle ABC \cong \triangle TDF$
8. $\triangle DCT \cong \triangle FLG$
9. $\triangle PWR \cong \triangle ADE$

Decide whether enough information is given to prove that the triangles are congruent. If there is enough information, state the congruence postulate you would use.

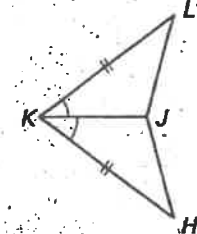
10. $\triangle XYW, \triangle ZWY$



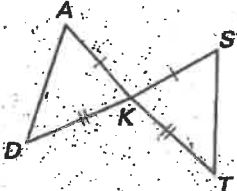
11. $\triangle MAE, \triangle TAE$



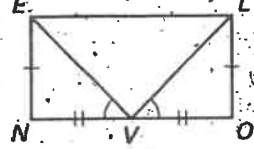
12. $\triangle KHJ, \triangle KLI$



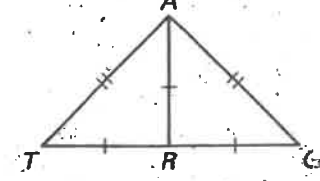
13. $\triangle DKA, \triangle TKS$



14. $\triangle ENV, \triangle LOV$



15. $\triangle TRA, \triangle GRA$



Practice B

For use with pages 212–219

For each triangle, name the included angle between the pair of sides given.

1. $\triangle MAT$: \overline{MT} and \overline{TA}

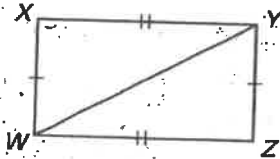
2. $\triangle CDA$: \overline{CA} and \overline{DC}

3. $\triangle PSC$: \overline{CS} and \overline{PS}

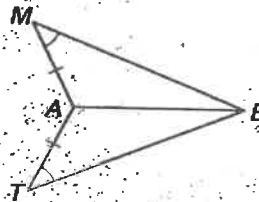
4. $\triangle WDG$: \overline{DG} and \overline{GW}

Decide whether enough information is given to prove that the triangles are congruent. If there is enough information, state the congruence postulate you would use.

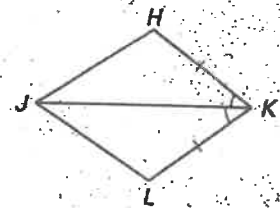
5. $\triangle XYW$, $\triangle ZWY$



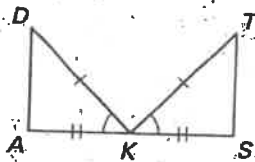
6. $\triangle MAE$, $\triangle TAE$



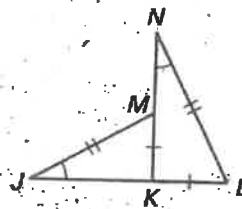
7. $\triangle KHJ$, $\triangle K LJ$



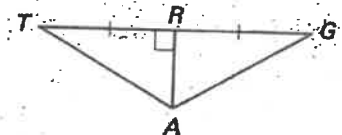
8. $\triangle DKA$, $\triangle TKS$



9. $\triangle JKM$, $\triangle NKL$



10. $\triangle TRA$, $\triangle GRA$

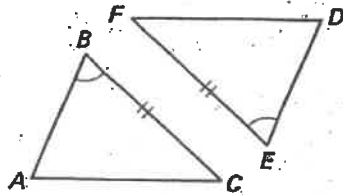


Practice A

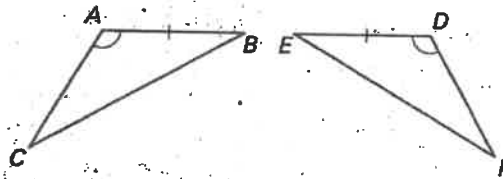
For use with pages 220-227

State the third congruence that must be given to prove that $\triangle ABC \cong \triangle DEF$ using the indicated postulate or theorem.

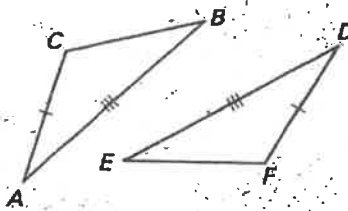
① ASA Congruence Postulate



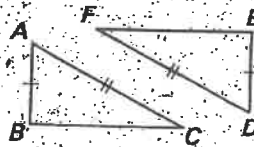
② AAS Congruence Theorem



③ SSS Congruence Postulate

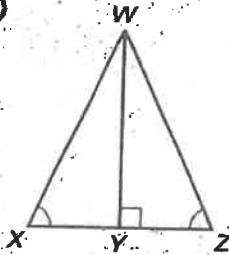


④ SAS Congruence Postulate

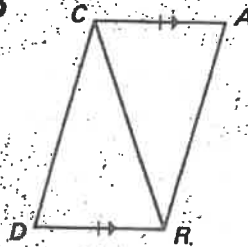


Is it possible to prove that the triangles are congruent? If so, state the postulate or theorem you would use. Explain your reasoning.

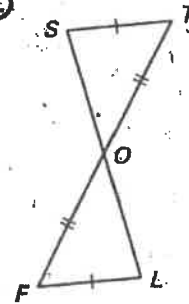
⑤



⑥



⑦



Practice B

For use with pages 220-227

State the third congruence that must be given to prove that $\triangle DEF \cong \triangle MNO$, using the indicated postulate or theorem.

1. Given: $\overline{DE} \cong \overline{MN}$

$\angle M \cong \angle D$

Method: SAS Congruence Postulate

2. Given: $\overline{FE} \cong \overline{ON}$

$\angle F \cong \angle O$

Method: AAS Congruence Theorem

3. Given: $\overline{DF} \cong \overline{MO}$

$\angle F \cong \angle O$

Method: ASA Congruence Postulate

State the third congruence that must be given to prove that $\triangle ABC \cong \triangle XYZ$, using the indicated postulate or theorem.

4. Given: $\angle A \cong \angle X$

$\angle B \cong \angle Y$

Method: AAS Congruence Theorem

5. Given: $\angle A \cong \angle X$

$\overline{AB} \cong \overline{XY}$

Method: ASA Congruence Postulate

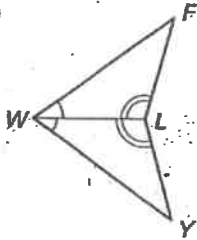
6. Given: $\angle C \cong \angle Z$

$\overline{BC} \cong \overline{YZ}$

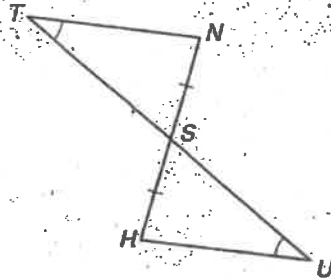
Method: AAS Congruence Theorem

Is it possible to prove that the triangles are congruent? If so, state the postulate or theorem you would use. Explain your reasoning.

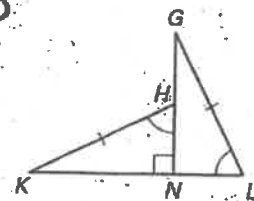
7.



8.



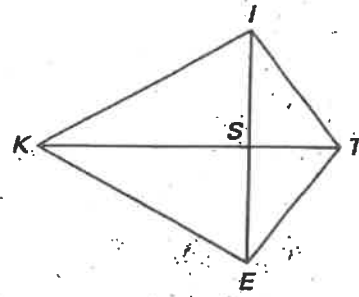
9.



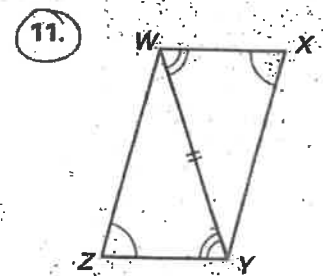
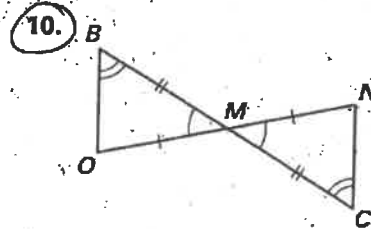
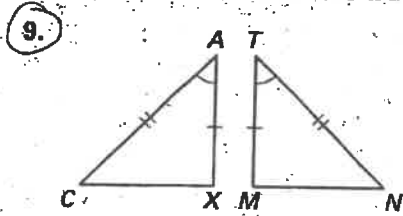
Practice A
For use with pages 229–235

Use the diagram to answer the following.

1. What triangles appear to be congruent?
2. To prove $\angle IKS \cong \angle EKS$, which triangles must you prove to be congruent?
3. To prove $\angle TIS \cong \angle TES$, which triangles must you prove to be congruent?
4. To prove $\overline{IK} \cong \overline{EK}$, which triangles must you prove to be congruent?

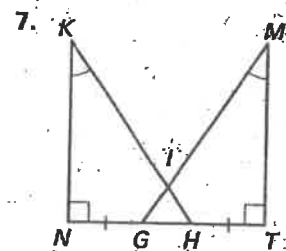
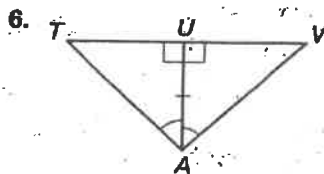
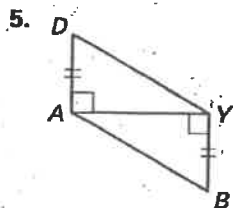


Use the marked diagram to state the method used to prove the triangles congruent. Name the additional corresponding parts that could then be concluded to be congruent.



4.5 Practice B

Use the marked diagram to state the method used to prove the triangles congruent. Name the additional corresponding parts that could then be concluded to be congruent.

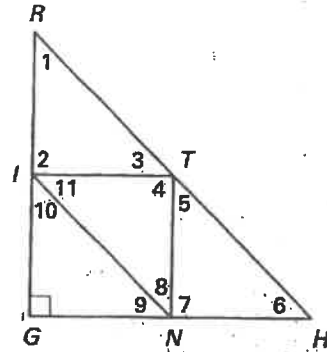


Practice A

For use with pages 236-242

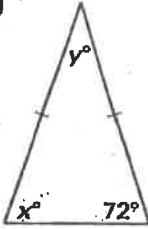
Use the diagram to answer the following.

1. If $\overline{RI} \cong \overline{IT}$, what angles are congruent?
2. If $\overline{TN} \cong \overline{IT}$, what angles are congruent?
3. If $\angle 1 \cong \angle 6$, what segments are congruent?
4. The legs of isosceles triangle $\triangle TNH$ are _____ and _____.
5. The vertex angle of $\triangle RGH$ is _____.

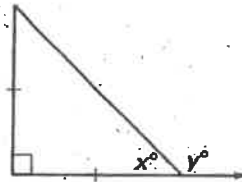


Solve for x and y .

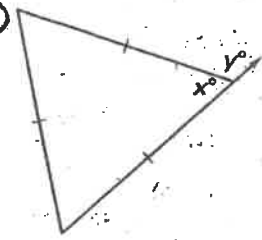
6.



7.

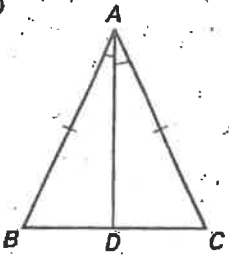


8.

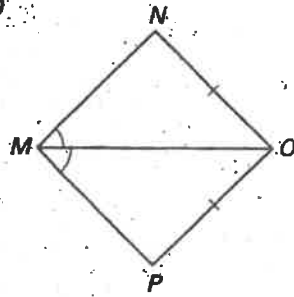


Decide whether enough information is given to prove that the triangles are congruent. Explain your answer.

9.

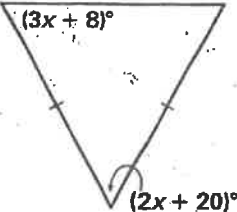


10.

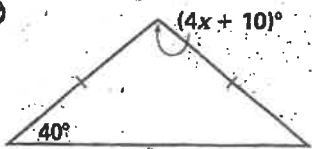


Solve for x .

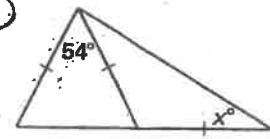
12.



13.



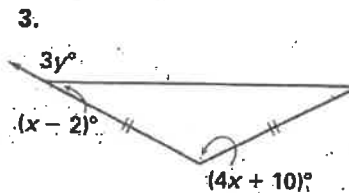
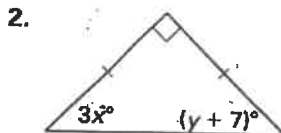
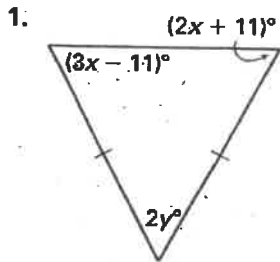
14.



Practice B

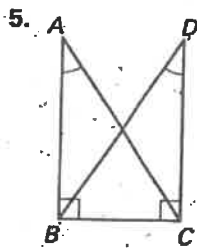
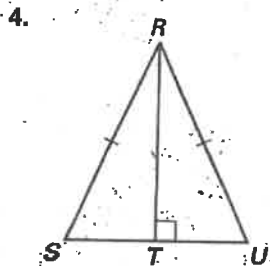
For use with pages 236-242

Solve for x and y .



Lesson 4.6

Decide whether enough information is given to prove that the triangles are congruent. Explain your answer.



4.1

Practice A

1. hypotenuse 2. leg 3. base 4. $\overline{AB}, \overline{BC}$
5. $\overline{AD}, \overline{BD}$ 6. acute isosceles
7. right scalene 8. acute equilateral
9. obtuse scalene 10. right scalene
11. obtuse isosceles 12. always

13. sometimes 14. never 15. sometimes
16. $m\angle 1 = 48^\circ$ 17. $m\angle 1 = 37^\circ; m\angle 2 = 57^\circ$
18. $m\angle 1 = 34^\circ; m\angle 2 = 78^\circ$

Practice B

1. $\overline{PM}, \overline{QM}$ 2. \overline{PQ} 3. \overline{PM} 4. $\overline{PN}, \overline{NM}$
5. $\angle Q, \angle NMQ$ 6. right scalene 7. obtuse isosceles 8. acute equilateral 9. sometimes
10. never 11. never 12. sometimes
13. $m\angle 1 = 36^\circ; m\angle 2 = 122^\circ; m\angle 3 = 122^\circ; m\angle 4 = 38^\circ$ 14. $m\angle 1 = 50^\circ; m\angle 2 = 90^\circ; m\angle 3 = 60^\circ; m\angle 4 = 60^\circ; m\angle 5 = 60^\circ; m\angle 6 = 60^\circ; m\angle 7 = 100^\circ$ 15. $m\angle A = 60^\circ; m\angle B = 30^\circ; m\angle C = 90^\circ$; right scalene
16. $m\angle A = 83^\circ; m\angle B = 38^\circ; m\angle C = 59^\circ$; acute scalene 17. $m\angle A = 40^\circ; m\angle B = 50^\circ; m\angle C = 90^\circ$; right scalene

4.2

Practice A

1. $\overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \overline{CA} \cong \overline{FD}$
2. $\angle M \cong \angle P, \angle N \cong \angle Q, \angle O \cong \angle R$
3. check student diagram;
 $\overline{RU} \cong \overline{TN}, \overline{UV} \cong \overline{NF}, \overline{RV} \cong \overline{TF}, \angle R \cong \angle T;$
 $\angle U \cong \angle N, \angle V \cong \angle F$ 4. $\angle T$ 5. \overline{JE} 6. 85
7. 63 8. 6 cm 9. $\triangle KLM$ 10. \overline{PL}
11. $\angle N$ 12. \overline{QM} 13. \overline{PW} 14. $\triangle OWV$
15. $\angle D$ 16. $\overline{BD} \cong \overline{BD}$ by Reflexive Property so $\triangle ABD \cong \triangle CDB$ by definition of congruence
17. none 18. none 19. $\angle IJH \cong \angle LJK$ by Vertical Angles Theorem so $\triangle IJH \cong \triangle LJK$ by definition of congruence

4.2 continued

Practice B

1. check student diagram; $\overline{AM} \cong \overline{CD}, \overline{AT} \cong \overline{CN}, \overline{MT} \cong \overline{DN}, \angle A \cong \angle C, \angle M \cong \angle D, \angle T \cong \angle N$
2. $\angle T$ 3. \overline{HS} 4. 48 5. 73 6. 5 cm
7. $\triangle JTM$ 8. $\angle DGE \cong \angle FEG$ by Third Angles Theorem so $\triangle DEG \cong \triangle FGE$ by def. of congruence 9. none
10. $\overline{YW} \cong \overline{YW}$ by Reflexive Property and $\angle XWY \cong \angle ZWY$ by Third Angles Theorem so $\triangle XWY \cong \triangle ZWY$ by definition of congruence
11. $x = 17, y = 17$ 12. $a = 9, b = 8$

13.

Statements	Reasons
1. $\angle ABD \cong \angle CDB,$ $\angle ADB \cong \angle CBD,$ $\overline{AD} \cong \overline{BC}, \overline{AB} \cong \overline{DC}$	1. Given
2. $\overline{BD} \cong \overline{BD}$	2. Reflexive Prop.
3. $\angle A \cong \angle C$	3. Third Angles Thm.
4. $\triangle ABD \cong \triangle CDB$	4. Def. of $\cong \triangle$

4.3

Practice A

1. $\angle MTR$ 2. $\angle QTR$ 3. $\angle TRM$ 4. $\angle Q$
5. $\angle M$ 6. $\angle QRT$ 7. $\overline{AB} \cong \overline{TD}, \overline{BC} \cong \overline{DF}, \overline{AC} \cong \overline{TF}, \angle A \cong \angle T, \angle B \cong \angle D, \angle C \cong \angle F$
8. $\overline{DC} \cong \overline{FL}, \overline{CT} \cong \overline{LG}, \overline{DT} \cong \overline{FG}, \angle D \cong \angle F, \angle C \cong \angle L, \angle T \cong \angle G$
9. $\overline{PW} \cong \overline{AD}, \overline{WR} \cong \overline{DE}, \overline{PR} \cong \overline{AE}, \angle P \cong \angle A, \angle W \cong \angle D, \angle R \cong \angle E$ 10. yes, SSS Congruence Postulate 11. no 12. yes, SAS Congruence Postulate 13. yes, SAS Congruence Postulate 14. no 15. yes, SSS Congruence Postulate 16. 1. Given 2. Definition of midpoint 3. Given 4. Definition of midpoint 5. Vertical Angles Theorem 6. SAS Congruence Postulate

4.3 continued:

Practice B

1. $\angle T$ 2. $\angle C$ 3. $\angle S$ 4. $\angle G$ 5. yes, SSS Congruence Postulate 6. no 7. yes, SAS Congruence Postulate 8. yes, SAS Congruence Postulate 9. no 10. yes, SAS Congruence Postulate 11. 1. Given 2. $\overline{MO} \cong \overline{OQ}$ 3. O is the midpoint of \overline{NP} 4. $\overline{NO} \cong \overline{OP}$ 5. Vertical Angles Theorem 6. SAS Congruence Postulate 12. We are given $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{DA}$. We know $\overline{AC} \cong \overline{AC}$ by Reflexive Property of Congruence. So, $\triangle ABC \cong \triangle CDA$ by SSS Congruence Postulate.

13.

Statements	Reasons
1. $\overline{AD} \cong \overline{CB}$	1. Given
2. $\overline{AD} \parallel \overline{CB}$	2. Given
3. $\angle ABD \cong \angle CDB$	3. Alternate Interior Angles Post.
4. $\overline{DB} \cong \overline{DB}$	4. Reflexive Prop. of Congruence
5. $\triangle ABD \cong \triangle CDB$	5. SAS Congruence Post.

4.4

Practice A

1. $\angle C \cong \angle F$ 2. $\angle C \cong \angle F$ 3. $\overline{CB} \cong \overline{EF}$
 4. $\angle A \cong \angle D$ 5. yes; AAS Congruence Theorem by using given information and $\overline{WY} \cong \overline{WY}$ by Reflexive Property of Congruence
 6. yes; SAS Congruence Postulate; use $\angle DRC \cong \angle ACR$ by Alternate Interior Angles Theorem and $\overline{CR} \cong \overline{CR}$ by Reflexive Property of Congruence. 7. no 8. 1. Given 2. Alternate Interior Angles Theorem 3. Given 4. Vertical Angles Theorem 5. ASA Congruence Postulate

4.4 continued

9.

Statements	Reasons
1. $\overline{AB} \parallel \overline{CD}$	1. Given
2. $\angle ABC \cong \angle DCB$	2. Alternate Interior \angle Thm.
3. $\overline{AC} \parallel \overline{BD}$	3. Given
4. $\angle ACB \cong \angle DBC$	4. Alternate Interior \angle Thm.
5. $\overline{CB} \cong \overline{CB}$	5. Reflexive Prop. of Congruence
6. $\triangle ABC \cong \triangle DCB$	6. ASA Congruence Post.

Practice B

1. $\overline{DF} \cong \overline{MO}$ 2. $\angle D \cong \angle M$ 3. $\angle D \cong \angle M$
 4. $\overline{BC} \cong \overline{YZ}$ or $\overline{AC} \cong \overline{XZ}$ 5. $\angle B \cong \angle Y$
 6. $\angle A \cong \angle X$ 7. yes, ASA Congruence Postulate; use $\overline{WL} \cong \overline{WL}$ by Reflexive Property of Congruence 8. yes, AAS Congruence Theorem; use $\angle TSN \cong \angle USH$ by Vertical Angles Theorem
 9. yes; AAS Congruence Theorem

10.

Statements	Reasons
1. B is midpoint of \overline{AE} .	1. Given
2. $\overline{AB} \cong \overline{BE}$	2. Def. of Midpoint
3. B is midpoint of \overline{CD} .	3. Given
4. $\overline{DB} \cong \overline{BC}$	4. Def. of Midpoint
5. $\angle ABD \cong \angle EBC$	5. Vertical Angles Thm.
6. $\triangle ABD \cong \triangle EBC$	6. SAS Congruence Post.

11.

Statements	Reasons
1. $\overline{AB} \parallel \overline{CD}$	1. Given
2. $\angle ABC \cong \angle DCB$	2. Alternate Interior \angle Thm.
3. $\overline{AB} \cong \overline{CD}$	3. Given
4. $\overline{CB} \cong \overline{CB}$	4. Reflexive Prop. of Congruence
5. $\triangle ABC \cong \triangle DCB$	5. SAS Congruence Post.

12.

Statements	Reasons
1. $\overline{WU} \parallel \overline{YV}$, $\overline{XU} \parallel \overline{ZV}$	1. Given
2. $\angle VZY \cong \angle UXW$ $\angle VYZ \cong \angle UWX$	2. Corresp. Angles Post.
3. $\overline{WX} \cong \overline{YZ}$	3. Given
4. $\triangle WXU \cong \triangle YZV$	4. ASA Congruence Post.

Practice A

1. $\triangle KIS$ and $\triangle KES$, $\triangle TIS$ and $\triangle TES$, $\triangle KIT$ and $\triangle KET$ 2. $\triangle KIS$ and $\triangle KES$ or $\triangle KIT$ and $\triangle KET$
 3. $\triangle TIS \cong \triangle TES$ 4. $\triangle KIS$ and $\triangle KES$ or $\triangle KIT$ and $\triangle KET$ 5. 12 6. 12

7. $\angle 3 \cong \angle 10$, $\angle 7 \cong \angle 9$, $\angle 6 \cong \angle 5$

8. $\overline{PD} \cong \overline{RD}$, $\overline{DL} \cong \overline{DA}$, $\overline{PL} \cong \overline{RA}$

9. SAS Congruence Postulate; $\overline{CX} \cong \overline{MN}$, $\angle C \cong \angle N$, $\angle X \cong \angle M$ 10. ASA Congruence Postulate; $\angle O \cong \angle N$, $\overline{BO} \cong \overline{CN}$

11. AAS Congruence Theorem; $\angle ZWY \cong \angle XYW$, $\overline{ZY} \cong \overline{XW}$, $\overline{ZW} \cong \overline{YX}$

12. 1. Given 2. Given 3. Reflexive Property of Congruence 4. SSS Congruence Postulate
 5. Corresponding parts of congruent triangles are congruent.

13.

Statements	Reasons
1. $\overline{AC} \cong \overline{DC}$	1. Given
2. $\angle A \cong \angle D$	2. Given
3. $\angle ACB \cong \angle DCE$	3. Vertical Angles Theorem
4. $\triangle ACB \cong \triangle DCE$	4. ASA Congruence Post.
5. $\angle B \cong \angle E$	5. Corresp. parts of \cong triangles are \cong .

Practice B

1. $\triangle RSL$ 2. $\triangle RLP$ 3. $\overline{LS} \cong \overline{SA}$ or $\angle SPL \cong \angle SRA$ 4. $\overline{PA} \cong \overline{RL}$ or $\angle PAL \cong \angle RLA$ or $\angle PLA \cong \angle RAL$

5. SAS Congruence Postulate; $\overline{DY} \cong \overline{BA}$, $\angle D \cong \angle B$, $\angle DYA \cong \angle BAY$ 6. ASA Congruence Postulate; $\angle T \cong \angle V$, $\overline{TU} \cong \overline{VU}$, $\overline{AT} \cong \overline{AV}$ 7. AAS Congruence Theorem; $\angle KHN \cong \angle MGT$, $\overline{KN} \cong \overline{MT}$, $\overline{KH} \cong \overline{MG}$

8. 1. Given 2. Given 3. Definition of angle bisector 4. Reflexive Property of Congruence
 5. SAS Congruence Postulate 6. Corresponding parts of congruent triangles are congruent.

9.

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 Prop. of congruence
5. $\triangle NTM \cong \triangle QMT$	5. SAS Congruence Postulate
6. $\overline{MN} \cong \overline{TQ}$	6. Corresponding parts of \cong triangles are \cong .

10.

Statements	Reasons
1. O is the midpoint of \overline{NP} .	1. Given
2. $\overline{NO} \cong \overline{OP}$	2. Def. of midpoint
3. $\angle N \cong \angle P$	3. Given
4. $\angle SON \cong \angle ROP$	4. Vertical \angle Theorem
5. $\triangle SON \cong \triangle ROP$	5. ASA Congruence Postulate
6. $\overline{SO} \cong \overline{OR}$	6. Corresponding parts of \cong triangles are \cong .
7. O is the midpoint of \overline{SR} .	7. Def. of midpoint

4.6

Practice A

1. $\angle 1 \cong \angle 3$ 2. $\angle 8 \cong \angle 11$ 3. $\overline{RG} \cong \overline{HG}$
4. $\overline{NT}, \overline{NH}$ 5. $\angle G$ 6. 72, 36 7. 45, 135
8. 60, 120 9. SAS Congruence Postulate using $\overline{AD} \cong \overline{AD}$ by Reflexive Property of Congruence
10. Not enough information

11. ASA Congruence Postulate using $\angle ROS \cong \angle TOU$ by Vertical Angles Theorem and $\angle S \cong \angle U$ by Alternate Interior Angles Theorem

12. 18 13. $22\frac{1}{2}$ 14. $31\frac{1}{2}$

15.

Statements	Reasons
1. \overline{BO} bisects $\angle ADC$.	1. Given
2. $\angle 1 \cong \angle 2$	2. Def. of angle bisector
3. $\overline{DB} \perp \overline{AC}$	3. Given
4. $\angle 3 \cong \angle 4$	4. Perpendiculars form \cong adjacent angles.
5. $\overline{DB} \cong \overline{DB}$	5. Reflexive Prop. of Congruence
6. $\triangle DBA \cong \triangle DBC$	6. ASA Congruence Postulate
7. $\overline{DA} \cong \overline{DC}$	7. Corresp. parts of \cong triangles are \cong .
8. $\triangle ADC$ is isosceles	8. Def. of isosceles triangle

Practice B

1. $x = 22, y = 35$ 2. $x = 15, y = 38$
3. $x = 29, y = 51$ 4. AAS Congruence Theorem; since $\overline{RS} \cong \overline{RU}$, angles opposite them are congruent so, $\angle S \cong \angle U$.
5. AAS Congruence Theorem; use $\overline{BC} \cong \overline{BC}$ by Reflexive Property of congruence 6. no
7. $x = 10, y = 20$ 8. $x = 32, y = 19$
9. $x = 30, y = 7$

10.

Statements	Reasons
1. $\overline{FG} \cong \overline{FJ}$	1. Given
2. $\angle G \cong \angle J$	2. Base Angles Theorem
3. $\overline{HG} \cong \overline{HJ}$	3. Given
4. $\triangle FGH \cong \triangle FJI$	4. SAS Congruence Postulate
5. $\overline{HF} \cong \overline{HF}$	5. Corresp. parts of \cong triangles are \cong .

11.

Statements	Reasons
1. $\angle 1 \cong \angle 2$	1. Given
2. $\overline{TP} \cong \overline{RA}$	2. Given
3. $\angle TMP \cong \angle RMA$	3. Vertical Angles Theorem
4. $\triangle TMP \cong \triangle RMA$	4. AAS Congruence Theorem
5. $\overline{TM} \cong \overline{RM}$	5. Corresp. parts of \cong triangles are \cong .
6. $\angle 3 \cong \angle 4$	6. Base Angles Thm.