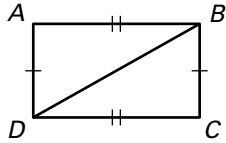


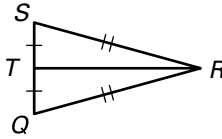
LESSON 4.3 **Practice B**
For use with pages 243–249

Decide whether the congruence statement is true. Explain your reasoning.

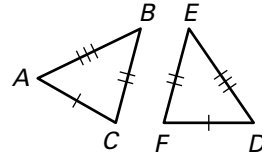
1. $\triangle ABD \cong \triangle CDB$



2. $\triangle RST \cong \triangle RQT$



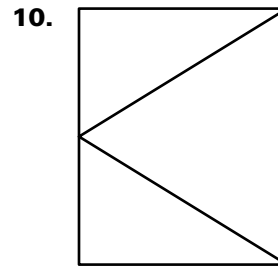
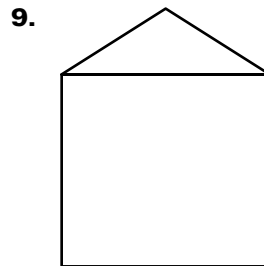
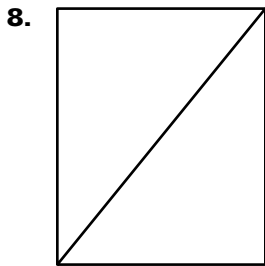
3. $\triangle ABC \cong \triangle DEF$



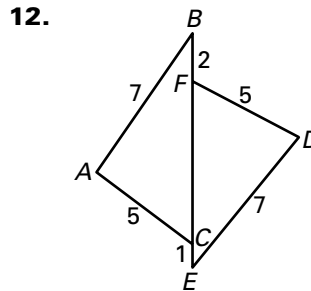
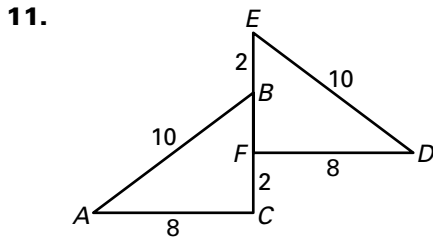
Use the given coordinates to determine if $\triangle ABC \cong \triangle DEF$.

4. $A(1, 2), B(4, -3), C(2, 5), D(4, 7), E(7, 2), F(5, 10)$
5. $A(1, 1), B(4, 0), C(7, 5), D(4, -5), E(6, -6), F(9, -1)$
6. $A(2, -2), B(5, 1), C(4, 8), D(7, 5), E(10, 8), F(9, 13)$
7. $A(-3, 0), B(6, 2), C(-1, 9), D(4, -10), E(13, -8), F(6, -1)$

Decide whether the figure is stable. Explain your reasoning.



Determine whether $\triangle ABC \cong \triangle DEF$. Explain your reasoning.



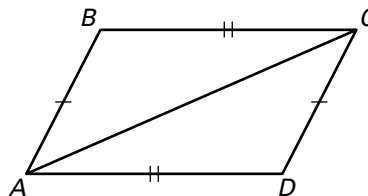
LESSON
4.3

Practice B *continued*
For use with pages 243–249

13. Proof Complete the proof.

GIVEN: $\overline{AB} \cong \overline{CD}$, $\overline{BC} \cong \overline{AD}$

PROVE: $\triangle ABC \cong \triangle CDA$

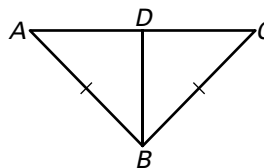


Statements	Reasons
1. $\overline{AB} \cong \overline{CD}$	1. ?
2. $\overline{BC} \cong \overline{AD}$	2. ?
3. $\overline{AC} \cong \overline{AC}$	3. ?
4. $\triangle ABC \cong \triangle CDA$	4. ?

14. Proof Complete the proof.

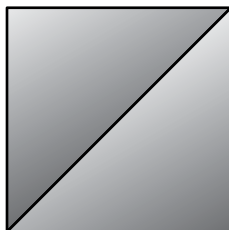
GIVEN: $\overline{AB} \cong \overline{CB}$, D is the midpoint of \overline{AC} .

PROVE: $\triangle ABD \cong \triangle CBD$



Statements	Reasons
1. $\overline{AB} \cong \overline{CB}$	1. ?
2. D is the midpoint of \overline{AC} .	2. ?
3. $\overline{AD} \cong \overline{CD}$	3. ?
4. $\overline{BD} \cong \overline{BD}$	4. ?
5. $\triangle ABD \cong \triangle CBD$	5. ?

15. Picture Frame The backs of two different picture frames are shown below. Which picture frame is stable? *Explain* your reasoning.



Lesson 4.3

Practice Level A

1. neither 2. corresponding angles
 3. corresponding sides 4. neither
 5. false; $\triangle IHJ \cong \triangle KHJ$ 6. true; SSS
 7. false; $\triangle ACE \cong \triangle BFD$ 8. true; SSS
 9. Stable; the figure forms triangles of fixed side lengths which cannot change shape by the SSS Congruence Postulate. 10. Not stable; there are many possible shapes for a four-sided figure with the given side lengths. 11. congruent
 12. not congruent 13. yes; the corresponding sides are congruent. 14. no; the corresponding sides are not congruent. 15. The second gate door has a diagonal support that forms two triangles with fixed sides, and these triangles cannot change shape by the SSS Congruence Postulate.

Practice Level B

1. true; SSS 2. true; SSS 3. true; SSS
 4. congruent 5. not congruent
 6. not congruent 7. congruent 8. Stable; the figure forms triangles of fixed side lengths which cannot change shape by the SSS Congruence Postulate. 9. Not stable; there are many possible shapes for a four-sided figure with the given side lengths. 10. Stable; the figure forms triangles of fixed side lengths which cannot change shape by the SSS Congruence Postulate. 11. Yes; the corresponding sides are congruent.
 12. No; the corresponding sides are not congruent. 13. Given; Given; Reflexive Property of Congruence; SSS Congruence Postulate
 14. Given; Given; Definition of midpoint; Reflexive Property of Congruence; SSS Congruence Postulate
 15. The second picture frame is stable because the brace and the sides form triangles of fixed side lengths which cannot change shape by the SSS Congruence Postulate.

Practice Level C

1. true; SSS 2. true; SSS 3. true; SSS
 4. congruent 5. congruent 6. not congruent
 7. not congruent 8. Stable; the figure forms triangles of fixed side lengths which cannot change shape by the SSS Congruence Postulate.
 9. Not stable; there are many possible shapes for a four-sided figure with the given side lengths.

10. The triangle vertices do not correspond.

Sample answer: $\triangle JHI \cong \triangle IKJ$

11. $\overline{HI} \cong \overline{JK}$; $\overline{IJ} \cong \overline{KH}$; $\overline{HJ} \cong \overline{HJ}$;
 $\triangle HIJ \cong \triangle JKH$ 12. $\overline{WX} \cong \overline{YX}$; Z is the midpoint of \overline{WY} ; $\overline{WZ} \cong \overline{YZ}$; $\overline{XZ} \cong \overline{XZ}$; $\triangle WXZ \cong \triangle YXZ$

13. $x = 3$; Setting $2x + 3 = 7x - 12$ and $-x + 14 = 6x - 7$ yields $x = 3$ in both equations.

Review for Mastery

1. Yes, the corresponding triangle sides are congruent 2. No; $\overline{WY} \not\cong \overline{ZY}$, $\overline{XY} \not\cong \overline{WY}$
 3. Yes, the corresponding triangle sides are congruent 4. Yes, the corresponding triangle sides are congruent 5. Yes, the corresponding triangle sides are congruent 6. No; $\overline{JK} \not\cong \overline{MP}$, $\overline{JL} \not\cong \overline{MN}$ 7. $AB = DE = \sqrt{5}$ so $\overline{AB} \cong \overline{DE}$; $BC = EF = \sqrt{13}$ so $\overline{BC} \cong \overline{EF}$; $CA = FD = 2\sqrt{5}$ so $\overline{CA} \cong \overline{FD}$; By the SSS Congruence Postulate, $\triangle ABC \cong \triangle DEF$.

Challenge Practice

1.

Statements	Reasons
1. $\overline{PA} \cong \overline{PC}$ $\overline{AB} \cong \overline{BC}$	1. Given
2. $\overline{PB} \cong \overline{PB}$	2. Reflexive property of congruence
3. $\triangle PAB \cong \triangle PCB$	3. SSS Congruence Postulate

2.

Statements	Reasons
1. $\overline{AD} \cong \overline{CF}$ $\overline{DC} \cong \overline{FA}$	1. Given
2. $\overline{AC} \cong \overline{AC}$	2. Reflexive property of congruence
3. $\triangle ADC \cong \triangle CFA$	3. SSS Congruence Postulate

3.

Statements	Reasons
1. $\overline{AE} \cong \overline{FC}$ $\overline{BE} \cong \overline{BF}$ $\overline{AB} \cong \overline{BC}$	1. Given
2. $AE + EF = AF$ $FC + EF = EC$	2. Segment Addition Postulate
3. $AE = FC$	3. Definition of Congruent Segments
4. $FC + EF = AF$	4. Substitution property of equality
5. $AF = EC$	5. Substitution property of equality