

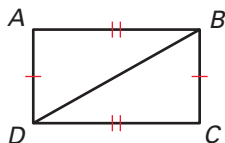
LESSON  
4.8Exercise  
Set A

**MM1G1e** Use the coordinate plane to investigate properties of and verify conjectures related to triangles and quadrilaterals.

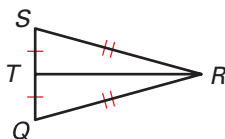
**MM1G3c** Understand and use congruence postulates and theorems for triangles (SSS, SAS, ASA, AAS, HL).

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

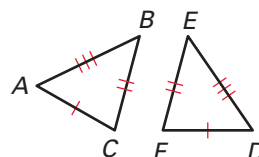
1.  $\triangle ABD \cong \triangle CDB$



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



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

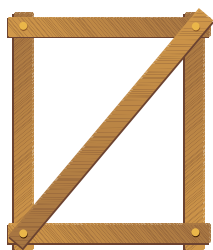


Use the given coordinates to determine if  $\triangle ABC \cong \triangle DEF$ .

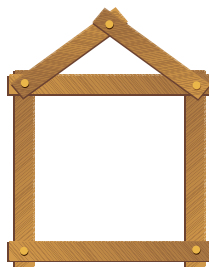
4.  $A(1, 2), B(4, -3), C(2, 5), D(4, 7), E(7, 2), F(5, 10)$
5.  $A(1, 1), B(4, 0), C(7, 5), D(4, -5), E(6, -6), F(9, -1)$
6.  $A(2, -2), B(5, 1), C(4, 8), D(7, 5), E(10, 8), F(9, 13)$
7.  $A(-3, 0), B(6, 2), C(-1, 9), D(4, -10), E(13, -8), F(6, -1)$
8.  $A(0, 0), B(6, 5), C(9, 0), D(0, -1), E(6, -6),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

Use the SSS Congruence Postulate to decide whether the figure is stable. **Explain your reasoning.**

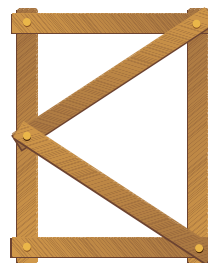
10.



11.

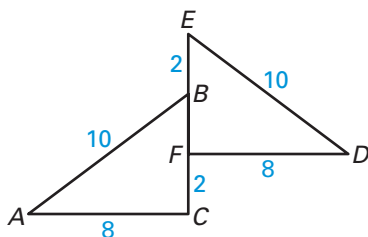


12.

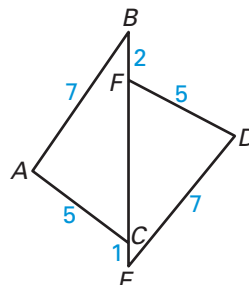


Determine whether  $\triangle ABC \cong \triangle DEF$ . **Explain your reasoning.**

13.



14.

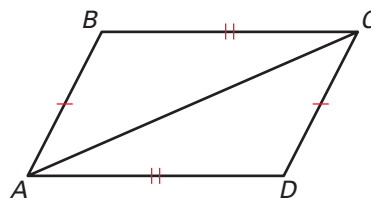


## Exercise Set A (continued)

15. **Proof** Copy and complete the proof.

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

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

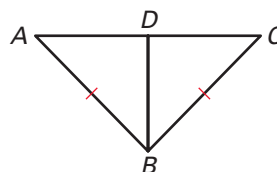


Statements	Reasons
1. $\overline{AB} \cong \overline{CD}$	1. ?
2. $\overline{BC} \cong \overline{AD}$	2. ?
3. $\overline{AC} \cong \overline{AC}$	3. ?
4. $\triangle ABC \cong \triangle CDA$	4. ?

16. **Proof** Copy and complete the proof.

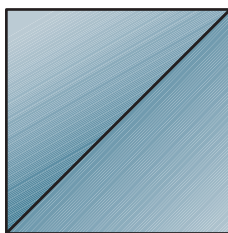
**GIVEN:**  $\overline{AB} \cong \overline{CB}$ ,  $D$  is the midpoint of  $\overline{AC}$ .

**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. ?

17. **Picture Frame** The backs of two different picture frames are shown below. Use the SSS Congruence Postulate to decide which picture frame is stable. Explain your reasoning.



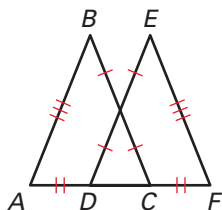
LESSON  
4.8Exercise  
Set B

**MM1G1e** Use the coordinate plane to investigate properties of and verify conjectures related to triangles and quadrilaterals.

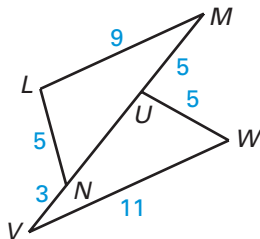
**MM1G3c** Understand and use congruence postulates and theorems for triangles (SSS, SAS, ASA, AAS, HL).

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

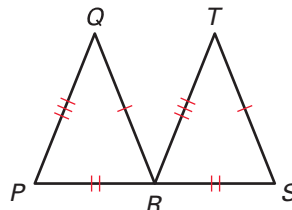
1.  $\triangle ABC \cong \triangle FED$



2.  $\triangle LMN \cong \triangle UVW$



3.  $\triangle PQR \cong \triangle RTS$



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

4.  $A(1, 3), B(4, 1), C(5, 3), D(3, -3), E(6, -5), F(7, -3)$

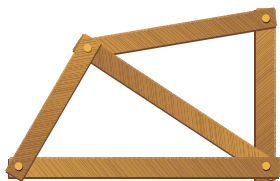
5.  $A(1, -1), B(-2, 2), C(-3, -4), D(3, 2), E(6, -1), F(7, 5)$

6.  $A(-3, 2), B(6, 1), C(-3, 4), D(6, 5), E(-2, 4), F(-1, -7)$

7.  $A(1, 1), B(-4, 2), C(-2, -4), D(4, -2), E(9, -3), F(8, 3)$

Use the SSS Congruence Postulate to decide whether the figure is stable. **Explain your reasoning.**

8.

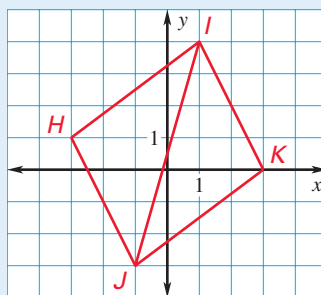


9.



10. **Error Analysis** Describe and correct the error in writing a congruence statement for the triangles in the coordinate plane.

$\triangle JHI \cong \triangle JKI$

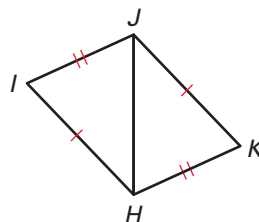


## Exercise Set B *(continued)*

11. **Proof** Copy and complete the proof.

**GIVEN:**  $\overline{HI} \cong \overline{JK}$ ,  
 $\overline{IJ} \cong \overline{KH}$

**PROVE:**  $\triangle HIJ \cong \triangle JKH$

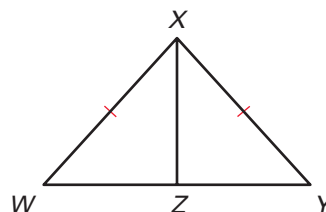


Statements	Reasons
1. <u>?</u>	1. Given
2. <u>?</u>	2. Given
3. <u>?</u>	3. Reflexive Property of Congruence
4. <u>?</u>	4. SSS Congruence Postulate

12. **Proof** Copy and complete the proof.

**GIVEN:**  $\overline{WX} \cong \overline{YX}$ ,  
 $Z$  is the midpoint of  $\overline{WY}$ .

**PROVE:**  $\triangle WXZ \cong \triangle YXZ$



Statements	Reasons
1. <u>?</u>	1. Given
2. <u>?</u>	2. Given
3. <u>?</u>	3. Definition of Midpoint
4. <u>?</u>	4. Reflexive Property of Congruence
5. <u>?</u>	5. SSS Congruence Postulate

13. Find all values of  $x$  that make the triangles congruent. *Explain.*

