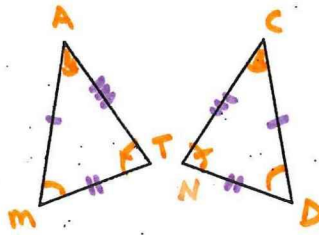


**LESSON 4.2 Practice**  
For use with pages 225-231

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.

$\rightarrow$  a congruence statement



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

2.  $\angle P \cong ?$   $\angle T$

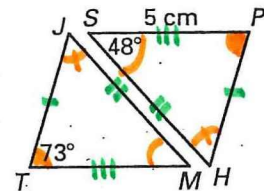
3.  $\overline{JM} \cong ?$   $\overline{HS}$

4.  $m\angle M = ?$   $48^\circ$

5.  $m\angle P = ?$   $73^\circ$

6.  $MT = ?$   $5\text{ cm}$

7.  $\triangle HPS \cong ?$   $\triangle JTM$

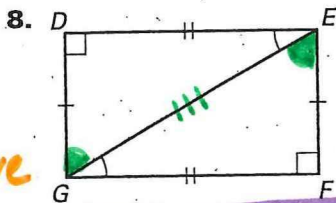


distance

$\triangle \cong \triangle$

Write a congruence statement for any figures that can be proved congruent. Explain your reasoning.

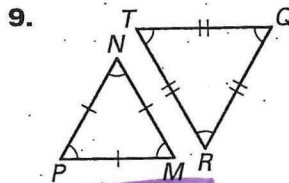
show that all corresponding parts are  $\cong$  (6 parts)



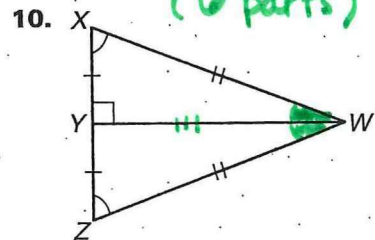
$\overline{GE} \cong \overline{GE}$   
Reflexive

$\triangle DEG \cong \triangle FGE$   
by Def. of  $\cong$  figures

$\angle DGE \cong \angle FEG$   
3rd  $\angle$ s Thm.



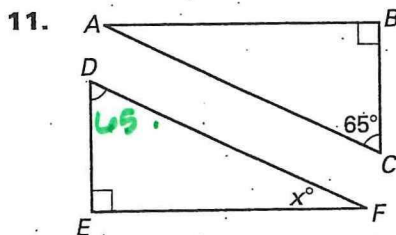
NO  
sides are  $\neq$



$\overline{YW} \cong \overline{YW}$  Reflexive  
 $\angle XWY \cong \angle ZWY$  3rd  $\angle$ s Thm.

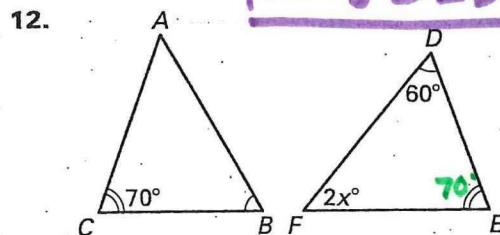
$\triangle XWY \cong \triangle ZWY$

Find the value of x.



$x + 65 = 90$  Cor.  $\Delta$  Sum Thm.

$x = 25^\circ$



$2x + 60 + 70 = 180$   $\Delta$  Sum Thm.

$2x + 130 = 180$

$2x = 50$

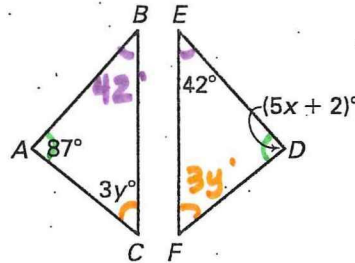
$x = 25$

LESSON  
**4.2**

**Practice** *continued*  
For use with pages 225-231

In Exercises 13 and 14, use the given information to find the indicated values.

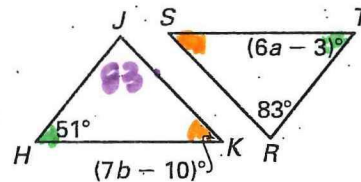
13. Given  $\triangle ABC \cong \triangle DEF$ , find the values of  $x$  and  $y$ .



$\angle D \cong \angle A$   
 $5x + 2 = 87$   
 $5x = 85$   
 $x = 17$

$3y + 87 + 42 = 180$   
 $3y + 129 = 180$   
 $3y = 51$   
 $y = 17$

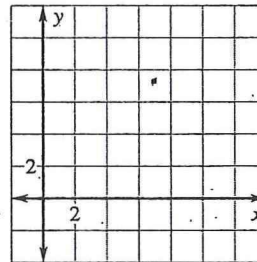
14. Given  $\triangle HJK \cong \triangle TRS$ , find the values of  $a$  and  $b$ .



$\angle T \cong \angle H$   
 $6a - 3 = 51$   
 $6a = 54$   
 $a = 9$

$7b - 10 + 51 + 83 = 180$   
 $7b + 124 = 180$   
 $7b = 56$   
 $b = 8$

15. Graph the triangle with vertices  $A(1, 2)$ ,  $B(7, 2)$ , and  $C(5, 4)$ . Then graph a triangle congruent to  $\triangle ABC$ .



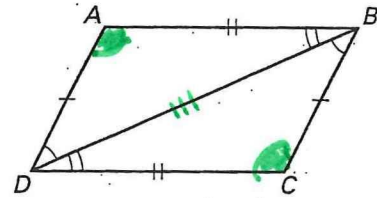
**LESSON**  
**4.2**

**Practice** *continued*  
For use with pages 225–231

**16. Proof** Complete the proof.

**GIVEN:**  $\angle ABD \cong \angle CDB, \angle ADB \cong \angle CBD,$   
 $\overline{AD} \cong \overline{BC}, \overline{AB} \cong \overline{DC}$

**PROVE:**  $\triangle ABD \cong \triangle CDB$



**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

3. ?  $\angle A \cong \angle C$

3. Third Angles Theorem

4.  $\triangle ABD \cong \triangle CDB$

4. ? Def. of  $\cong$  Figures

**17. Carpet Designs** A carpet is made of congruent triangles. One triangular shape is used to make all of the triangles in the design. Which property guarantees that all the triangles are congruent?