HW 8-6: Congruence
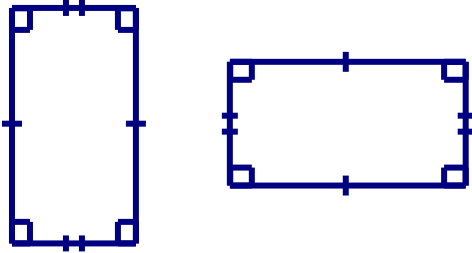
Determine whether each pair of polygons is congruent. Explain why it is or is not.
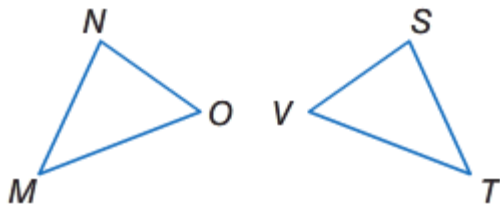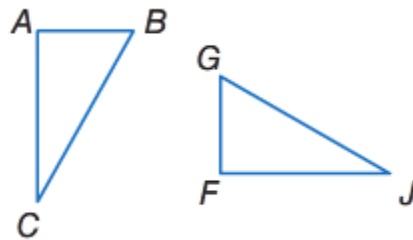
1.

2.

10 m

6 m

3 m

5 m

4 m

8 m
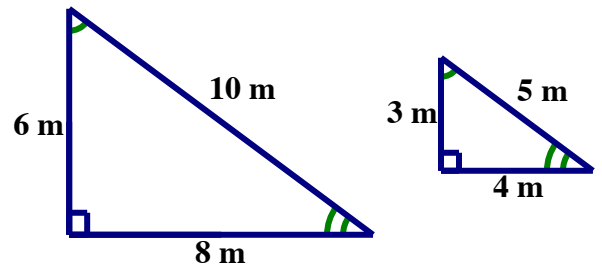
Write congruence statements for each set of congruent figures. Identify all pairs of congruent corresponding parts.

3.

N

S

O V

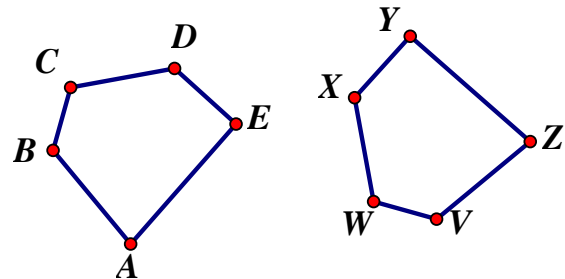M

T

4.   A   B

G

C

F   J

5. Pentagons **ABCDE** and **VWXYZ** are congruent. Write congruence statements the following congruent figures. Identify all pairs of congruent corresponding parts.

Y

D

C

X

B

E

Z

W   V

A

6. In the umbrella shown at the right, $\triangle JLK \cong \triangle NLM$.

    a. If $m\angle JKL = 66$, then $m\angle NML =$ _____?_____ .

    b. If $MN = 15$ inches, then $KJ =$ ____?____ .
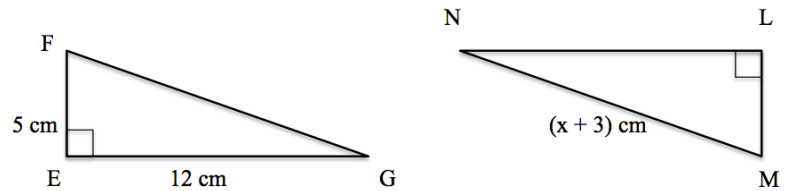
J   K

L

M   N

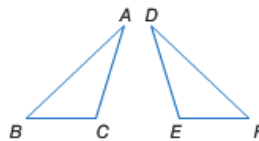**7.** In the figure, $\triangle ABC \cong \triangle EBD$.
   a. On the figure, draw arc and tic marks to identify the corresponding parts.
   b. Find the value of x.
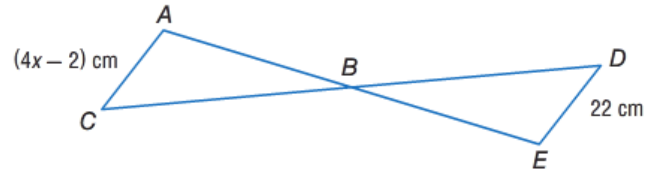
8. In the figure at the right, $\triangle EFG \cong \triangle LMN$. Find the value of x.

9. Mandar is making a congruence statement for the congruent triangles shown. Find his mistake and correct it.

Triangle ABC is congruent to triangle DEF.

10. Determine whether each statement is *true* or *false*. If true, explain your reasoning. If false, give a counterexample.
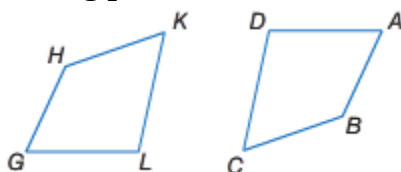   **a.** If two figures are congruent, their perimeters are equal.

   b. If two figures have the same perimeter, they are congruent.

11. Which of the following statements is *not* true if $\triangle CDE \cong \triangle FGH$?
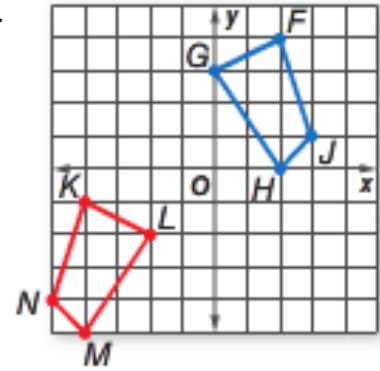
Ⓐ $\angle C \cong \angle F$ Ⓒ $\overline{CE} \cong \overline{HG}$

Ⓑ $\angle H \cong \angle E$ Ⓓ $\overline{DC} \cong \overline{GF}$

Write congruence statements for the following congruent figures. Identify all pairs of congruent corresponding parts.
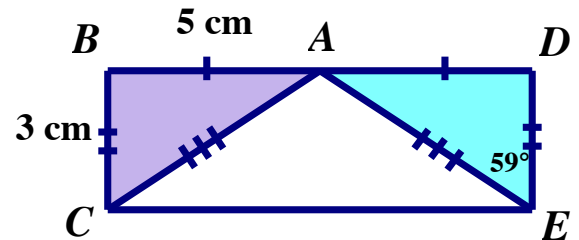
12.

13. Quadrilaterals **KLMN** and **FGHJ** are congruent. Write congruence statements for the following congruent figures. Identify all pairs of congruent corresponding parts.
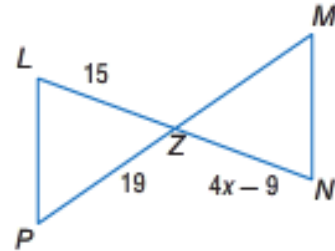
14. In the quilt design shown, ▲**ABC** ≅ ▲**ADE**. What is the measure of ∠**BCA** ?

15. In the figure, ▲**LZP** ≅ ▲**NZM** .
   a. On the figure, draw arc and tick marks to then identify the corresponding parts.
   b. Find the value of x.

16. Wires stretching from the top of a telephone pole to the ground create two congruent triangles, △PQR and △SQR. Find QS.
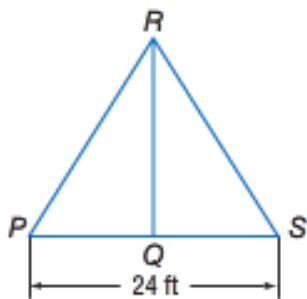
Ⓐ 12 ft
Ⓑ 24 ft
Ⓒ 48 ft
Ⓓ 65 ft

Solve each equation.

17. $5m + 3 = 9m - 1$

20. $4(m - 2) = 4m$

18. $\dfrac{w - 5}{4} = \dfrac{2}{3}$

21. $8d = 4d - 18$

22. $2h - 4h + 5 = 3(h - 9)$

19. $3(g - 1) + 7 = 3g + 4$