

CPCTC & Naming Congruent Triangles

What does CPCTC stand for?

Congruent Parts of Congruent
Triangles are Congruent

Why do we need it?

Use the given information and triangle congruence statement to complete the following.

1. $\triangle \overset{ABC}{\cancel{DEF}} \cong \triangle GEO$, $AB = 4$, $BC = 6$, and $AC = 8$. What is the length of \overline{GO} ? How do you know?

$$\triangle ABC \cong \triangle GEO$$

$$\angle A \cong \angle G \quad \overline{AB} \cong \overline{GE}$$

$$\angle B \cong \angle E \quad \overline{BC} \cong \overline{EO}$$

$$\angle C \cong \angle O \quad \overline{AC} \cong \overline{GO}$$

$$\overline{GO} = 8$$

2. $\triangle BAD \cong \triangle LUK$, $m\angle D = 52^\circ$, $m\angle B = 48^\circ$, and $m\angle A = 80^\circ$

a. What is the largest angle of $\triangle LUK$? $m\angle U = 80^\circ$

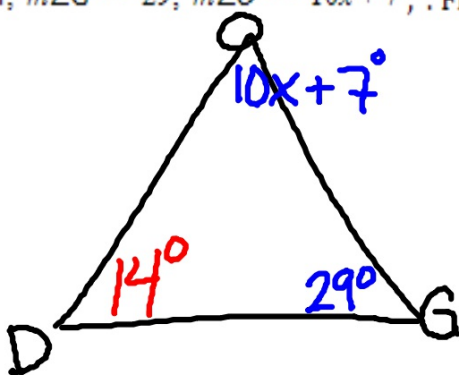
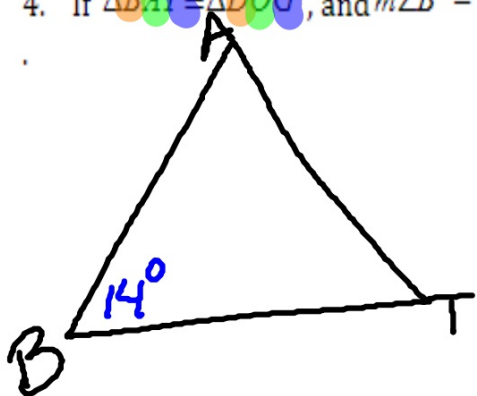
b. What is the smallest angle of $\triangle LUK$? $m\angle L = 48^\circ$

3. $\triangle SUN \cong \triangle HOT$. $\triangle SUN$ is isosceles. Is there enough information to determine if $\triangle HOT$ is isosceles? Explain why or why not.

Yes $\triangle HOT$ isosceles! By CPCTC

I. Draw and label a diagram. Then solve for the variable and the missing measure or length.

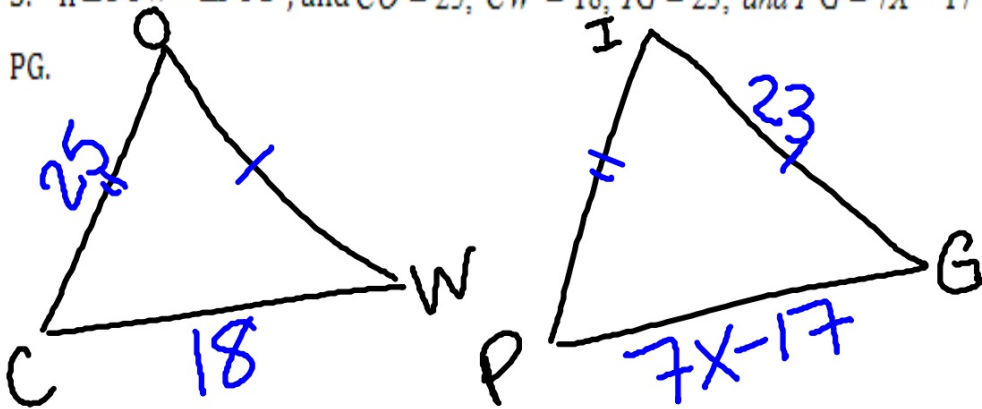
4. If $\triangle BAT \cong \triangle DOG$, and $m\angle B = 14$, $m\angle G = 29$, $m\angle O = 10x + 7$, . Find the value of x and $m\angle O$



$$10(13) + 7 = 137^\circ$$

$$x = \underline{13}$$
$$m\angle O = \underline{137^\circ}$$

5. If $\triangle COW \cong \triangle PIG$, and $CO = 25$, $CW = 18$, $IG = 23$, and $PG = 7X - 17$. Find the value of x and PG .

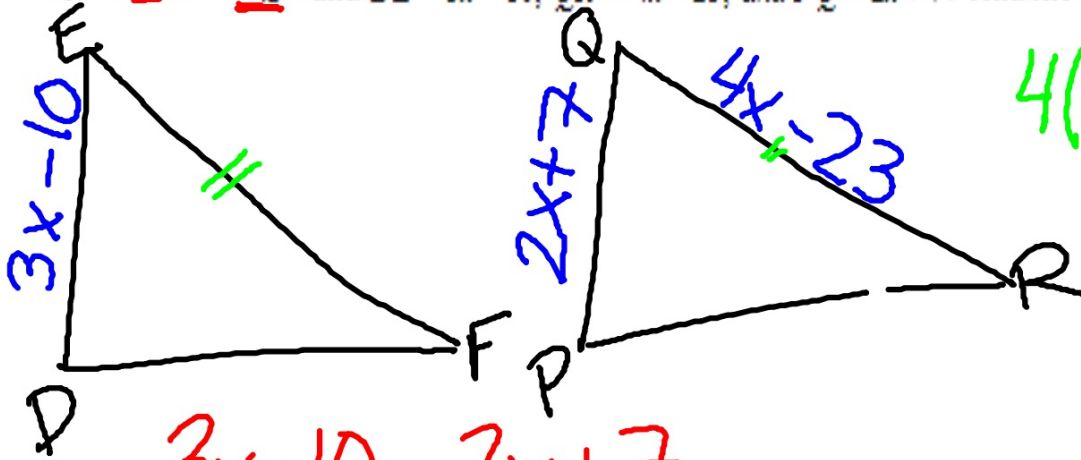


$$\begin{array}{r}
 7x - 17 = 18 \\
 +17 \quad +17 \\
 \hline
 7x = 35 \\
 x = 5
 \end{array}$$

$$\begin{array}{r}
 7(5) - 17 \\
 35 - 17 \\
 \checkmark \\
 18
 \end{array}$$

$$\begin{array}{l}
 x = \underline{5} \\
 PG = \underline{18}
 \end{array}$$

6. $\triangle DEF \cong \triangle PQR$ and $DE = 3x - 10$, $QR = 4x - 23$, and $PQ = 2x + 7$. Find the value of x and EF .



$$4(17) - 23 = 45$$

$$3x - 10 = 2x + 7$$

$$x = 17$$

$$x = \underline{17}$$
$$EF = \underline{45}$$

Homework is on Page 5