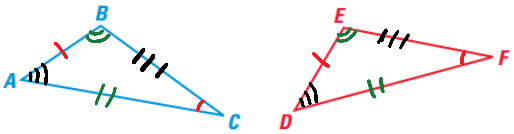
Name _____ Date _____

Congruent Triangles

- triangles that are the same _____ and _____
- each triangle has six parts: 3 _____ and 3 _____
- congruence is not affected by the following transformations:
- _____ , _____ _____ , _____

Definition of Congruent Triangles (CPCTC):

- Two triangles are congruent if and only if their _____ parts are congruent.
- CPCTC: Corresponding Parts of Congruent Triangles are Congruent

1) 

If the corresponding sides are congruent AND angles are congruent, then the triangles are congruent

1. $\overline{AB} \cong$ _____ 1. $\angle C \cong$ _____ $\Delta ABC \cong$ _____
2. $\overline{AC} \cong$ _____ 2. $\angle B \cong$ _____ (This must be written in
3. $\overline{BC} \cong$ _____ 3. $\angle A \cong$ _____ corresponding order)

2) Given that $\Delta ABC \cong \Delta QRS$, what sides are congruent? What angles are congruent?

If the corresponding sides are congruent AND angles are congruent, then the triangles are congruent

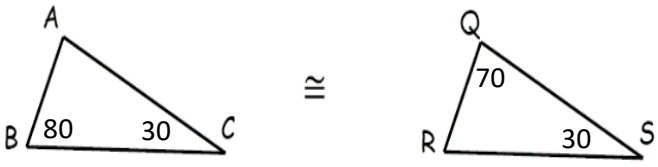
1. $\overline{AB} \cong$ _____ 1. $\angle C \cong$ _____ $\Delta ABC \cong$ _____
2. $\overline{AC} \cong$ _____ 2. $\angle B \cong$ _____ (This must be written in
3. $\overline{BC} \cong$ _____ 3. $\angle A \cong$ _____ corresponding order)

3) Write six different congruence statements for the following triangles. Name the first triangle however you choose, but the second must be in corresponding order.

$\Delta ABC \cong \Delta$ _____ $\Delta ACB \cong \Delta$ _____

$\Delta BAC \cong \Delta$ _____ Δ _____ $\cong \Delta$ _____

$\Delta CAB \cong \Delta$ _____ Δ _____ $\cong \Delta$ _____

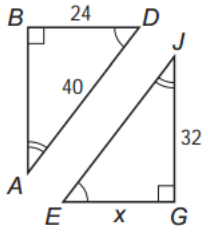


Complete each congruence statement if $\triangle DFH \cong \triangle PWZ$.

1. $\angle F \cong$ _____ **2.** $\angle P \cong$ _____ **3.** $\overline{DH} \cong$ _____ **4.** $\overline{ZW} \cong$ _____

Find the value of x for each pair of congruent triangles.

5.



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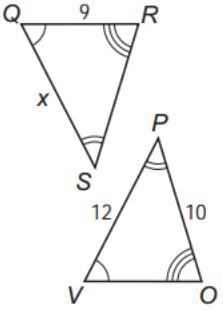

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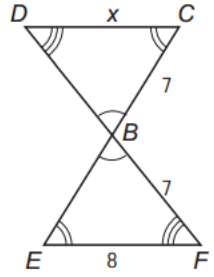

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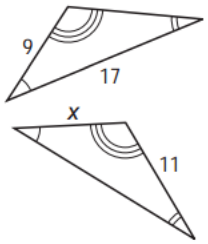
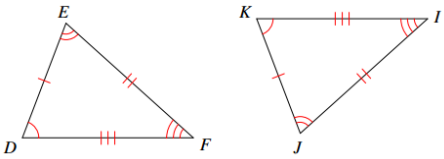


Complete each congruence statement.

9)



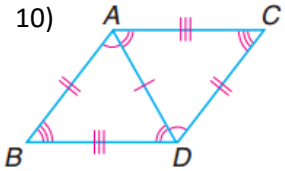
$\overline{DF} \cong$ _____ $\angle E \cong$ _____

$\overline{EF} \cong$ _____ $\angle F \cong$ _____

$\overline{ED} \cong$ _____ $\angle D \cong$ _____

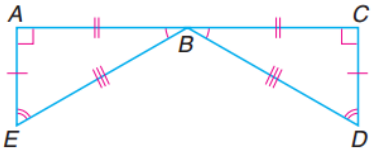
$\Delta DEF \cong \Delta$ _____

10)



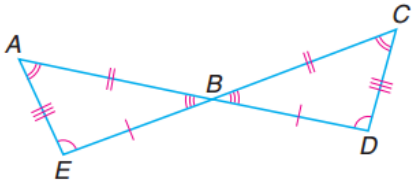
$\Delta BAD \cong \Delta$ _____

11)



$\Delta BCD \cong \Delta$ _____

11)



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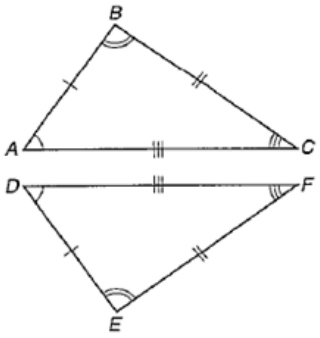
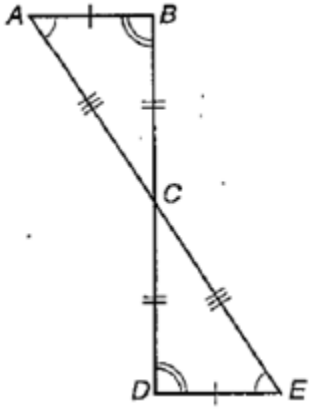


13)



14) If $\Delta PRQ \cong \Delta YXZ$, $m\angle P = 63$, and $m\angle Q = 57$, find $m\angle X$. [hint: draw a diagram]

15) Given $\triangle ABC \cong \triangle DEF$, $AB = 15$, $BC = 20$, $AC = 25$, and $FE = 3x - 7$, find x.

16) Given $\triangle ABC \cong \triangle DEF$, $DE = 10$, $EF = 13$, $DF = 16$, and $AC = 4x - 8$, find x.