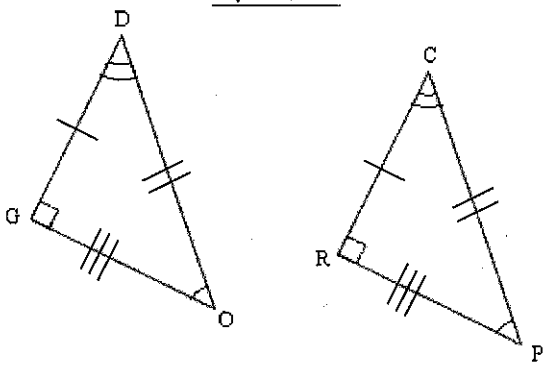
Name _____ Period ____

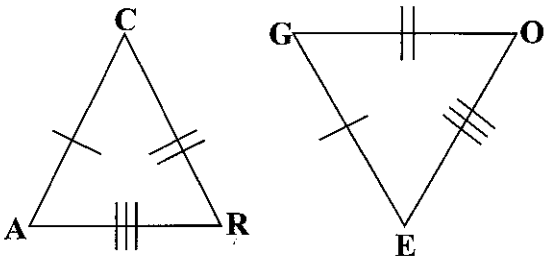
UNIT #2: TRIANGLE CONGRUENCE AND CPCTC

I. Write the congruence statement for each pair of triangles.

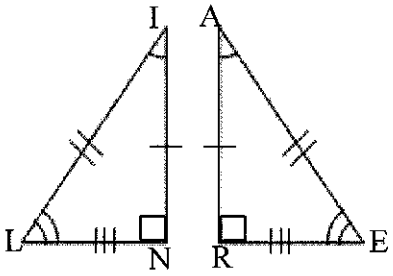
1. $\triangle OGD \cong \triangle$ PRC



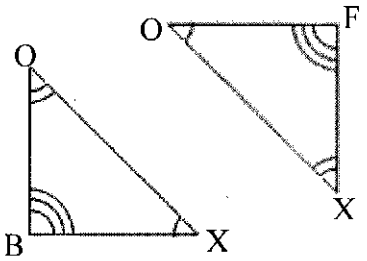
2. $\triangle RAC \cong \triangle$ OGE



3. $\triangle LIN \cong \triangle$ EAR

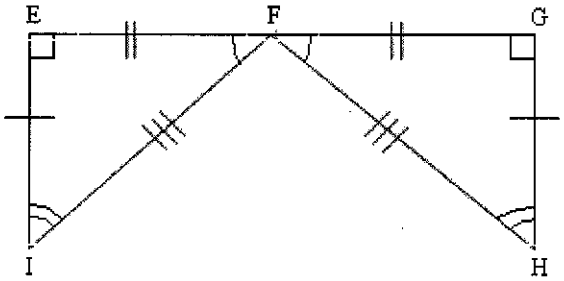


4. $\triangle FOX \cong \triangle$ BXO



II. Name the congruent triangle and the congruent parts.

7.



$\triangle FGH \cong \triangle$ FEI

$\angle EFI \cong \angle$ GFH $\quad \overline{FG} \cong$ FE

$\angle G \cong \angle$ E $\quad \overline{GH} \cong$ EI

$\angle H \cong \angle$ I $\quad \overline{FH} \cong$ FI

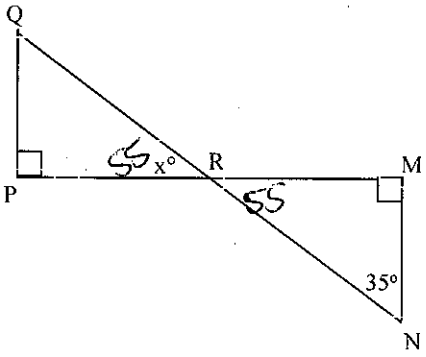
Use the congruency statement to fill in the corresponding congruent parts.

8. $\triangle EFI \cong \triangle HGI$ $\quad \angle E \cong \angle$ H $\quad \overline{FE} \cong \overline{GH} \quad \angle EFI \cong \angle$ HGI

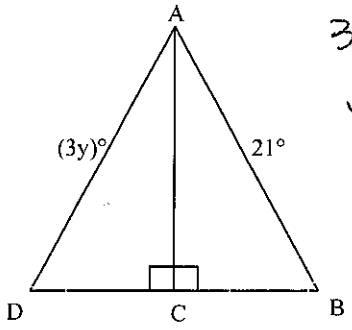
$\overline{FI} \cong \overline{GI} \quad \angle FIE \cong \angle$ GIE $\quad \overline{IE} \cong \overline{IH}$

III. Knowing the following triangles are congruent, find the missing variable.

9. $\triangle PQR \cong \triangle MNR$. Find x.

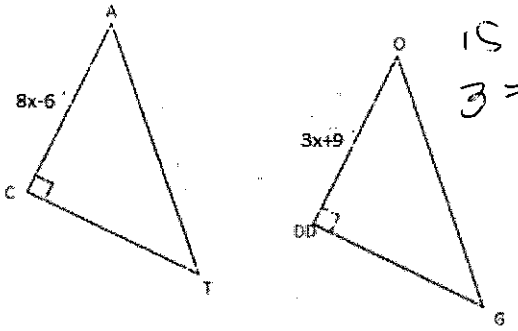


10. $\triangle ABC \cong \triangle ADC$. Find y.



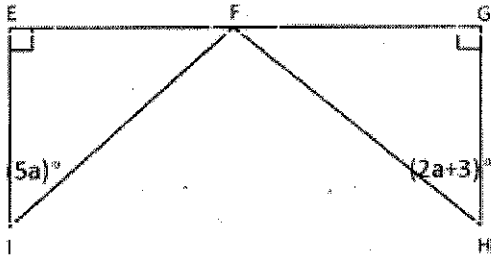
$3y = 21$
$y = 7$

11. $\triangle CAT \cong \triangle DOG$. Find x. $3x+9 = 8x-6$



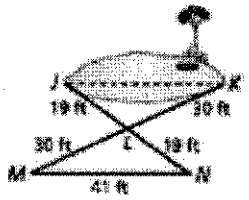
$15 = 5x$
$3 = x$

12. $\triangle IEF \cong \triangle HGF$. Find a.



$5a = 2a+3$
$3a = 3$
$a = 1$

13. $\triangle NLM \cong \triangle JKM$. Find JK

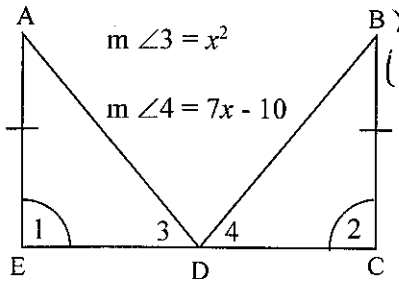


$\overline{JK} = 41$ ft

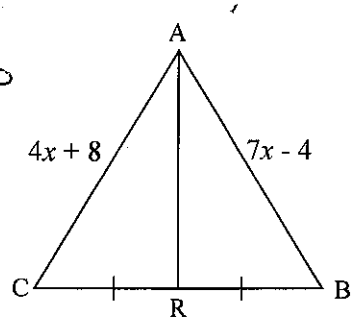
IV. For which value(s) of *x* are the triangles congruent?

14. $x =$ 5, 2

$x^2 = 7x - 10$
$x^2 - 7x + 10 = 0$
$(x-5)(x-2) = 0$

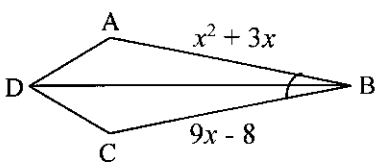


15. $x =$ 4



$4x + 8 = 7x - 4$
$12 = 3x$

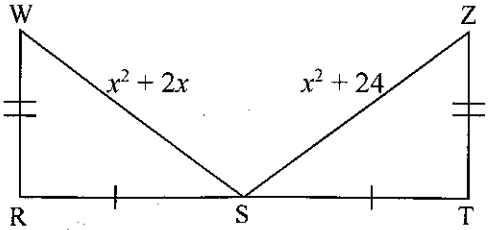
16. $x =$ 4, 2



$x^2 + 3x = 9x - 8$ $(x-4)(x-2)$
$x^2 - 6x + 9 = 0$

17. $x =$ 12

$x^2 + 2x = x^2 + 24$



$2x = 24$
$x = 12$