Name: _____

Aim#26: *4.2* How can we use our knowledge of congruent angles and segments to identify congruent figures?

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NHS-Geometry
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Guiding Questions	Notes/Diagrams/Illustrations

Define congruent figures.

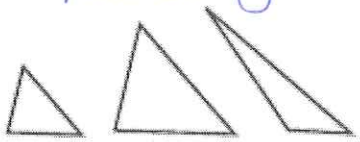
In two congruent figures, all the parts of one figure are congruent to the corresponding parts of the other figure. *same spot

Describe how to identify congruent parts.

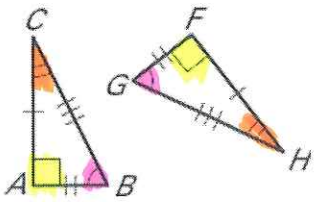
Congruent

Same size and shape

Not congruent



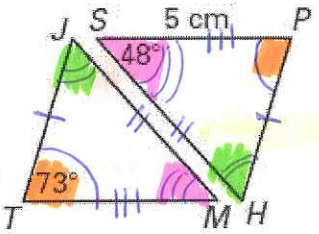
Different sizes or shapes



1. Write a congruence statement for the Δs. Identify all pairs of congruent corresponding parts.

$\angle A \cong \angle F$ $\quad \overline{AC} \cong \overline{FH}$
$\angle B \cong \angle G$ $\quad \overline{CB} \cong \overline{HG}$ so $\triangle ABC \cong \triangle FGH$
$\angle C \cong \angle H$ $\quad \overline{AB} \cong \overline{FG}$

** angles and sides are in the SAME spot.



In the diagram ΔTJM ≅ ΔPHS. Complete the statements. mark in ORDER

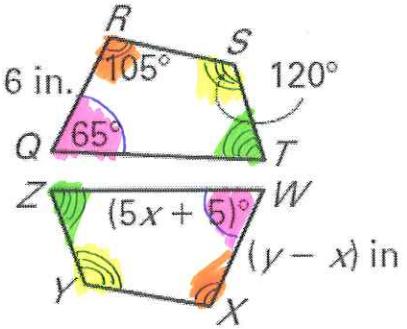
2. $\angle P \cong$?$\angle T$
3. $\overline{JM} \cong$? $\overline{HS}$
4. $m\angle M =$? $m\angle S$
5. $m\angle P =$? $m\angle T$
6. $MT =$? SP
7. $\triangle HPS \cong$? $\triangle JTM$

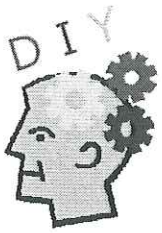
Predict how to use properties of congruent figures to solve equations.

8. In the diagram QRST ≅ WXYZ. Find the values of x and y.

$5x + 5 = 65$
$-5 \quad -5$
$\frac{5x}{5} = \frac{60}{5}$
$x = 12$

$y - x = 6$
$y - 12 = 6$
$+12 \quad +12$
$y = 18$



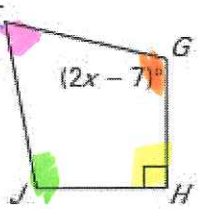


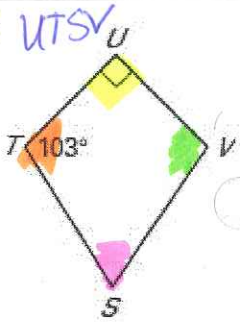
9. Identify the pairs of congruent corresponding parts. $HGFJ \cong UTSV$

$\angle H \cong \angle V$ $\angle J \cong \angle V$ $\overline{FJ} \cong \overline{SV}$

$\angle T \cong \angle G$ $\overline{HG} \cong \overline{UT}$ $\overline{JH} \cong \overline{VU}$

$\angle F \cong \angle S$ $\overline{GF} \cong \overline{TS}$





10. Find the value of x and find $m\angle G$.

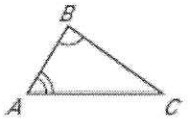
$2x - 7 = 103$

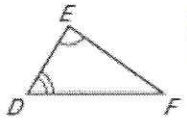
$+7 \quad +7$

$\frac{2x}{2} = \frac{110}{2}$ $x = 55$

Describe the third angle theorem.

If two angles of one triangle are congruent to two angles of another triangle, then the third angles are also congruent.





if $\angle B \cong \angle E$, $\angle A \cong \angle D$ then $\angle C \cong \angle F$.

How can we apply the third angles theorem?

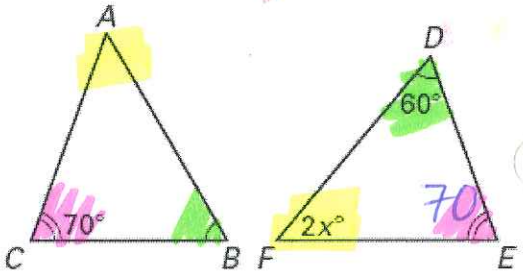
11. Find the value of x.

$2x + 70 + 60 = 180$

$2x + 130 = 180$

$-130 \quad -130$

$\frac{2x}{2} = \frac{50}{2}$ $x = 25$



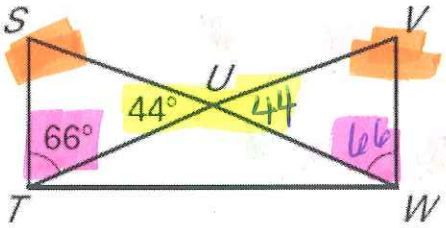
12. Find the $m\angle V$.

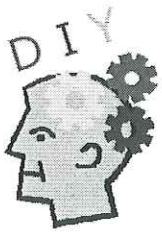
$180 = 66 + 44 + V$

$180 = 110 + V$

$-110 \quad -110$

$70 = x$





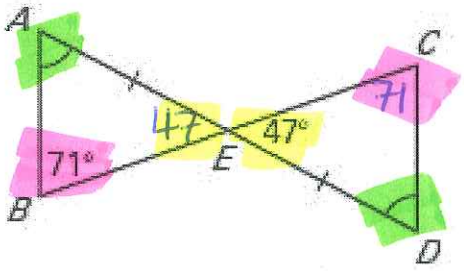
13. Find the $m\angle D$.

$180 = 47 + 71 + D$

$180 = 118 + D$

$-118 \quad -118$

$62 = D$



Summary: What is one thing you learned today?