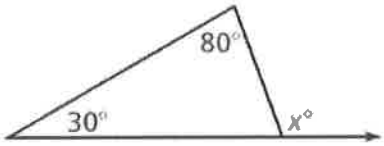
Name: Key Date: Hour:

Advanced Geometry
WS PC #1 Review – Unit 5

Find the measure of the exterior angle.

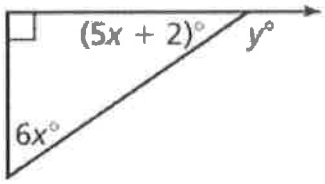
1.



$x = 30 + 80$

$x = 110°$

2.



$6x + 5x + 2 = 90$

$11x + 2 = 90$

$11x = 88$

$x = 8$

$5(8) + 2$

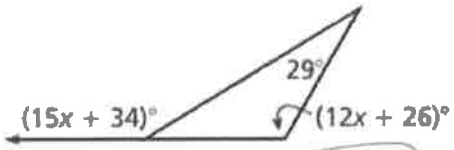
$40 + 2$

42

$180 - 42 = y$

$y = 138°$

3.



$15(7) + 34 = 139°$

$15x + 34 = 12x + 26 + 29$

$15x + 34 = 12x + 55$

$-12x \quad -12x$

$3x + 34 = 55$

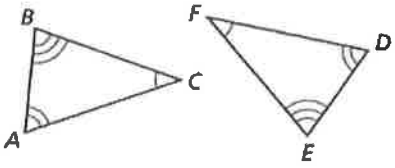
$-34 \quad -34$

$\frac{3x}{3} = \frac{21}{3}$

$x = 7$

Identify all pairs of congruent corresponding parts. Then write another congruence statement for the polygons.

4. $\triangle ABC \cong \triangle DEF$



$\overline{AB} \cong \overline{DE}$

$\overline{BC} \cong \overline{EF}$

$\overline{AC} \cong \overline{DF}$

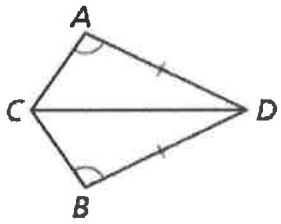
$\angle A \cong \angle D$

$\angle B \cong \angle E$

$\angle C \cong \angle F$

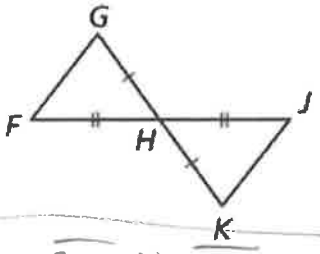
Decide whether enough information is given to prove that the triangles are congruent using the SAS congruence theorem. If so, write a proof. If not, explain why.

5. $\Delta CAD, \Delta CBD$



no, we know $\overline{CD} \cong \overline{CD}$ by reflexive POC but don't know anything else

6. $\Delta GHF,\ \Delta KHJ$



yes

1. $\overline{GH} \cong \overline{KH}$, $\overline{FH} \cong \overline{JH}$	1. given
2. $\angle H \cong \angle H$	2. Ref. POC
3. $\Delta GHF \cong \Delta KHF$	3. SAS

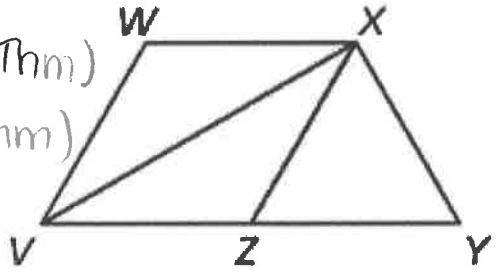
Copy and complete the statement. State which theorem you used.

7. If $VW \cong WX$, then $\angle$ WVX $\cong \angle$ WXV (Base $\angle$'s Thm)

8. If $XZ \cong XY$, then $\angle$ XZY $\cong \angle$ XYZ (Base $\angle$'s Thm)

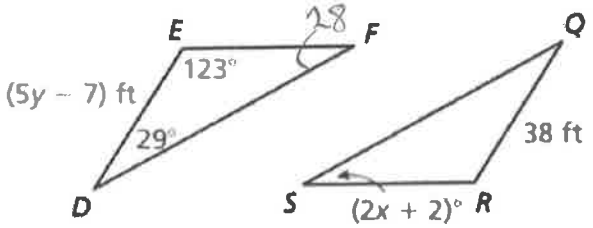
9. If $\angle ZVX \cong \angle ZXV$, then $\overline{VZ} \cong \overline{XZ}$ (Conv. Base $\angle$'s Thm)

10. If $\angle XYZ \cong \angle ZXY$, then $\overline{ZX} \cong \overline{ZY}$ (Conv Base $\angle$'s Thm)



Find the value of x and y.

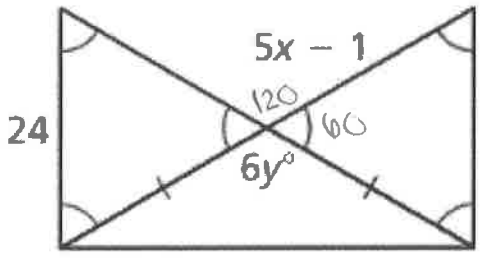
11. $\Delta DEF \cong \Delta QRS$



$5y - 7 = 38$
$+7 \quad +7$
$5y = 45$
$y = 9$

$2x + 2 = 28$
$-2 \quad -2$
$2x = 26$
$x = 13$

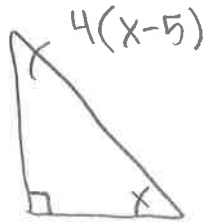
12.



$5x - 1 = 24$
$+1 \quad +1$
$5x = 25$
$x = 5$

$6y = 120$
$y = 20$

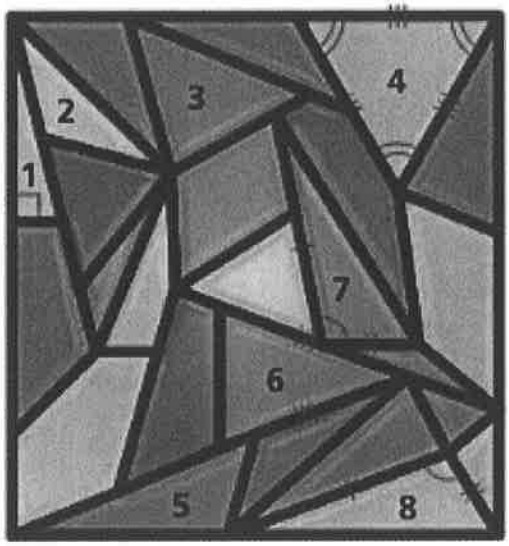
13. In a right triangle, the measure of one acute angle is 4 times the difference of the measure of the other acute angle and 5. Find the measure of each acute angle in the triangle.



$x + 4(x-5) = 90$
$x + 4x - 20 = 90$
$5x - 20 = 90$
$5x = 110$
$x = 22$

22°, 68°
90 − 22 = 68

14. The figure shows a stained glass window.



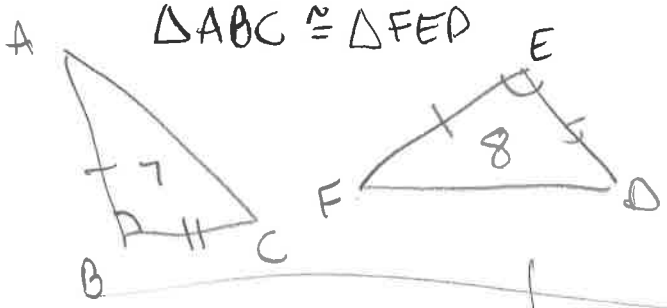
a. Classify triangles 1 – 4 by their angles.

1 = right
2 = obtuse
3 = Acute
4 = equiangular

b. Classify triangles 4 – 6 by their sides.

4 = equilateral
5 = scalene
6 = isosceles

c. Is there enough information to prove $\Delta 7 \cong \Delta 8$? If so, label the vertices and write a proof. If not, determine what additional information is needed.



$\Delta ABC \cong \Delta FED$

yes

1. $\overline{AB} \cong \overline{FE}$, $\overline{BC} \cong \overline{ED}$, $\angle B \cong \angle E$	1. given
2. $\Delta ABC \cong \Delta FED$	2. SAS