Name: KEY Date: Block:

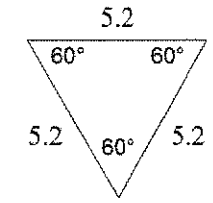
Geometry -- Chapter 4 Test Review

4.1 Classifying Triangles by Angle Measures or Side Lengths

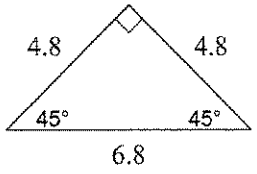
1. List all Triangle Classifications for Angle Measures: Acute, Right, Obtuse, Equiangular

2. List all Triangle Classifications by Side Lengths: Scalene, Isosceles, Equilateral

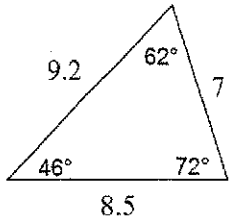
3. Classify each triangle by angle measures and side lengths.



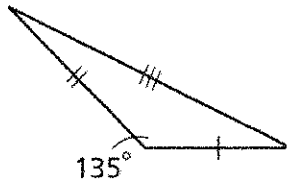
Equilateral
Equiangular



Isosceles
Right

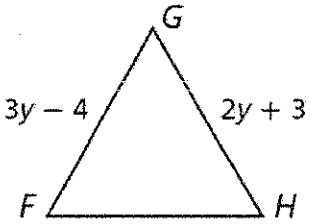


Acute
Scalene



Obtuse
Scalene

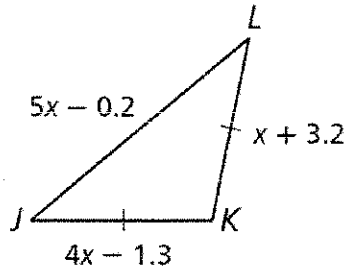
4. Given equilateral triangle FGH, find the length of FH.



$3y-4=2y+3$
$-2y \quad -2y$
$y-4=3$
$+4 \quad +4$
$y=7$

$FH = GH = 2(7)+3$ → **FH = 17**

5. Solve for x.

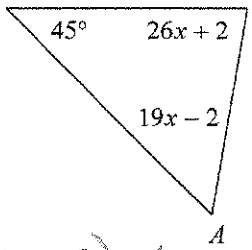


$4x-1.3=x+3.2$
$-x \quad -x$
$\frac{3x}{3}=\frac{4.5}{3}$
x = 1.5

4.2 Angle Relationships in Triangles (Angle Sum Theorem, Exterior Angle Theorem)

6. All angles inside a triangle add up to equal: 180°

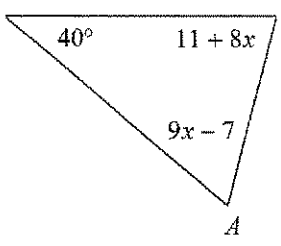
7. Find the measure of Angle A.



$m\angle A = 19(3)-2$
$m\angle A = 55°$

$45+(26x+2)+(19x-2)=180$
$45x+45=180$
$-45 \quad -45$
$\frac{45x}{45}=\frac{135}{45}$ → $x=3$

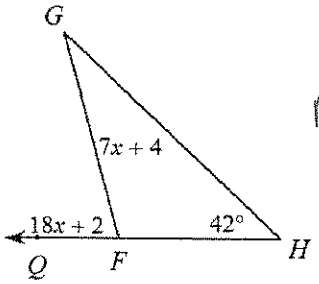
8. List the angles in order from least to greatest.



$40+11+8x+9x-7=180$
$17x+44=180$
$-44 \quad -44$
$\frac{17x}{17}=\frac{136}{17}$
$x=8$

$m\angle B = 11+8(8)=75$
$m\angle A = 9(8)-7=65$
∠C, ∠A, ∠B

9a. Find the measure of angle G.



$m\angle G = 7(4)+4$

$m\angle G = 32°$

$18x+2 = 7x+4+42$

$-7x \quad -7x$

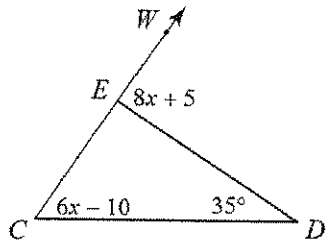
$11x+2 = 46$

$-2 \quad -2$

$\frac{11x}{11} = \frac{44}{11}$

$x = 4$

9b. Find the measure of angle WED.



$m\angle WED = m\angle C + m\angle D$

$8x+5 = 6x-10+35$

$8x+5 = 6x+25$

$-6x \quad -6x$

$2x+5 = 25$

$-5 \quad -5$

$\frac{2x}{2} = \frac{20}{2}$

$x = 10$

$m\angle WED = 8(10)+5$

$m\angle WED = 85°$

4.3 Triangle Congruence

Given: $\triangle JKL \cong \triangle DEF$. Identify the congruent corresponding parts.

10. $\overline{KL} \cong$? $\overline{EF}$

11. $\overline{DF} \cong$? $\overline{JL}$

12. $\angle K \cong$? $\angle E$

13. $\angle F \cong$? $\angle L$

Given: $\triangle PQR \cong \triangle STU$. Find each value.

14. PQ

Solve for m.

$3m+2 = 14$

$-2 \quad -2$

$\frac{3m}{3} = \frac{12}{3}$

$m = 4$

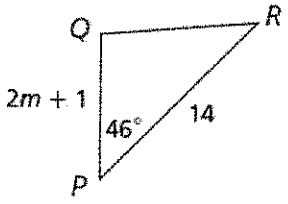
$PQ = 2(4)+1$

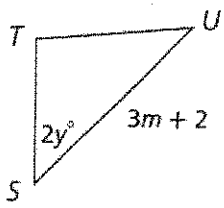
$PQ = 9$

15. y

$\frac{2y}{2} = \frac{46}{2}$

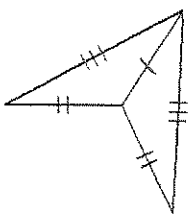
$y = 23$

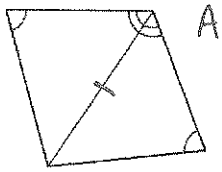




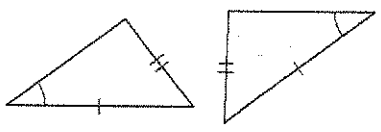
4.4-4.5 Triangle Congruence Shortcuts (SSS, SAS, ASA, AAS, HL)

16. If possible ,tell which shortcut will prove the two triangles are congruent?

(A)  SSS

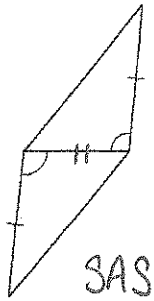
(B)  AAS

(C) Not ≅



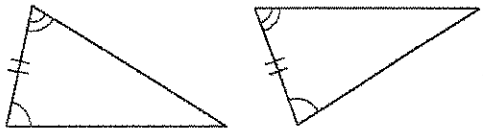
(16 Continued...Which shortcut proves the triangles are congruent??)

(D)



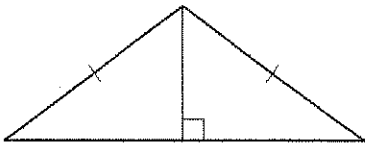
SAS

(E)



ASA

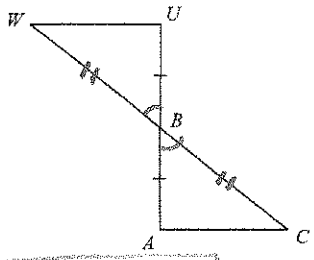
(F)



HL

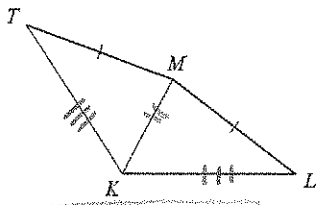
17. State what extra info is needed to prove the triangles are congruent by the given shortcut.

(A) SAS



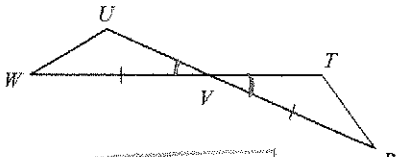
$\overline{BW} \cong \overline{BC}$

(B) SSS



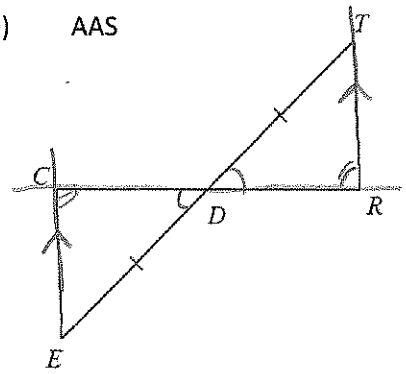
$\overline{TK} \cong \overline{KL}$

(C) AAS



$\angle U \cong \angle T$

(D) AAS



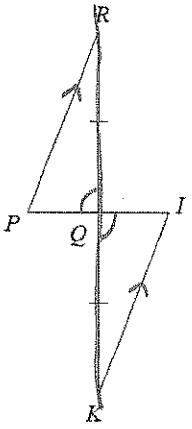
A) $\overline{CD} \cong \overline{DR}$

B) $\angle CED \cong \angle DTR$

C) $\angle CDE \cong \angle TDR$

D) $\overline{CE} \parallel \overline{TR}$

(E) ASA



A) ~~$\angle PQR \cong \angle IQK$~~

B) ~~$\overline{PQ} \cong \overline{IQ}$~~

C) $\overline{PR} \parallel \overline{KI}$

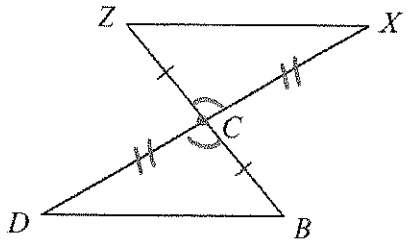
D) $\overline{RQ} \parallel \overline{QK}$

4.4 - 4.6 Proving Triangles Congruent and using CPCTC

18. Given: $\overline{ZC} \cong \overline{CB}$, C is the midpoint of DX

Prove: $\overline{ZX} \cong \overline{DB}$

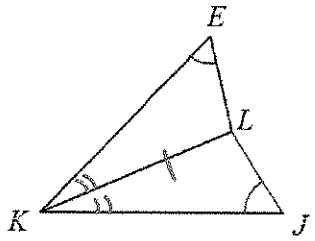
Statements	Reasons
$\overline{ZC} \cong \overline{CB}$	Given
C mdpt of $\overline{DX}$	Given
$\overline{DC} \cong \overline{CX}$	Def. of Mdpt
$\angle ZCX \cong \angle DCB$	Vertical Angles Theorem
$\Delta ZCX \cong \Delta BCD$	SAS
$\overline{ZX} \cong \overline{DB}$	CPCTC



19. Given: $\angle E \cong \angle J$, $\overline{LK}$ bisects $\angle EKJ$

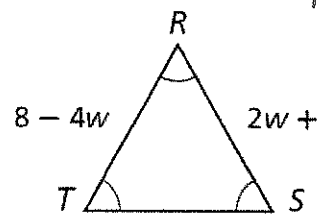
Prove: $\overline{EL} \cong \overline{LJ}$

Statements	Reasons
$\angle E \cong \angle J$	Given
$\overline{LK}$ bisects $\angle EKJ$	Given
$\angle EKL \cong \angle JKL$	Def. of Bisector
$\overline{KL} \cong \overline{KL}$	Reflexive POC
$\Delta EKL \cong \Delta JKL$	AAS
$\overline{EL} \cong \overline{LJ}$	CPCTC



4.8 - ISOSCELES and EQUILATERAL TRIANGLES

20. Find length of TS. Equiangular → Equilateral



$8 - 4w = 2w + 5$

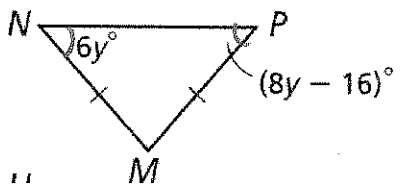
$-5 \quad +4w \quad +4w \quad -5$

$\frac{3}{6} = \frac{6w}{6}$

$\frac{1}{2} = w$

$TS = RS = 2(\frac{1}{2}) + 5$ $\boxed{TS = 6}$

21. Find the measure of angle N. Isosceles → Base Angles are ≅



$8y - 16 = 6y$

$-8y \quad -8y$

$\frac{-16}{-2} = \frac{-2y}{-2}$

$\boxed{8 = y}$

$m\angle N = 6(8)$

$\boxed{m\angle N = 48°}$