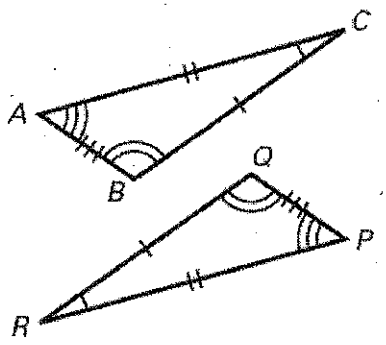
Geometry Name Key

Test Review Part B Period _____ Date _____

Triangle Congruency

1. Write a congruence statement for the triangles as well as congruency statements for all 3 sides and angles.



$\Delta ABC \cong \Delta PQR$

$\overline{AB} \cong \overline{PQ}$ $\quad \angle A \cong \angle P$

$\overline{BC} \cong \overline{QR}$ $\quad \angle B \cong \angle Q$

$\overline{AC} \cong \overline{PR}$ $\quad \angle C \cong \angle R$

2. Complete the following statements if $\Delta BAT \cong \Delta GLV$.

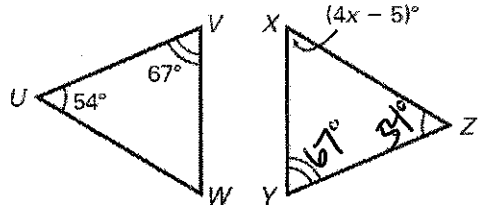
a. $\overline{BA} \cong \overline{GL}$ **b.** $\angle A \cong \angle L$

c. $\overline{VG} \cong \overline{TB}$ **d.** $\Delta TBA \cong \Delta VGL$

3. Find x for each pair of triangles below. **SHOW YOUR WORK.**

5x-2=40
5x=30
x=10

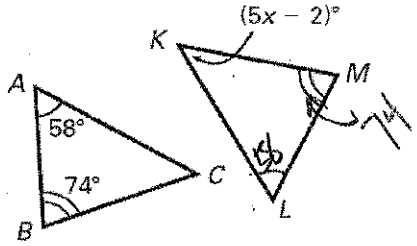
a.



4x-5+67+54=180

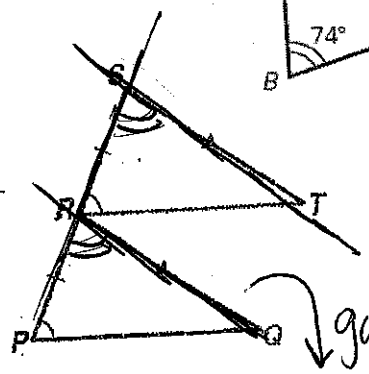
$x =$ 110

b.



$x =$ 10

4.



Given: $\overline{ST} \parallel \overline{RQ}$, $\overline{SR} \cong \overline{RP}$, $\angle SRT \cong \angle RPQ$

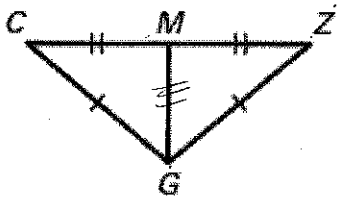
Prove: $\overline{RT} \cong \overline{PQ}$

goes w/ Proof

Statements	Reasons
1.	1. given
2. $\angle RST \cong \angle PRQ$	2. Corresponding ∠'s
3. $\Delta RST \cong \Delta PRQ$	3. ASA
4. $\overline{RT} \cong \overline{PQ}$	4. CPCTC

For each figure, **MARK** the angles and sides we know *must* be congruent, then determine if we can say the triangles are congruent. If so, complete the congruence statement and state the reason (SSS, etc.). If not, write "not enough information."

a.

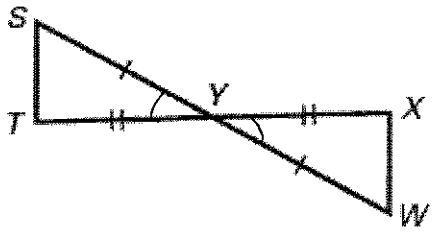


$\Delta MZG \cong$ ΔMCG

by SSS (SSS, etc.)

or: Not Enough Information

b.

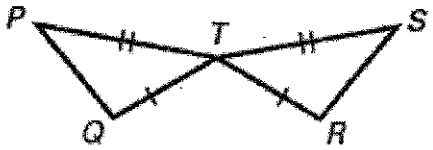


$\Delta STY \cong$ ΔWXY

by SAS (SSS, etc.)

or: Not Enough Information

c.



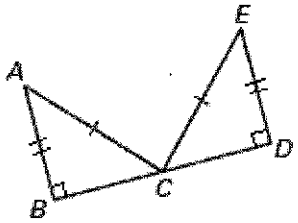
(Careful: Are these really vertical angles?)

$\Delta QPT \cong$ None

by _____ (SSS, etc.)

or: Not Enough Information

d.

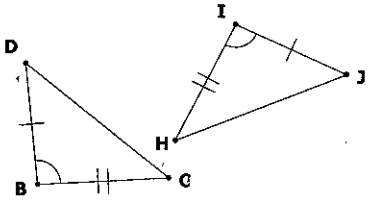


$\Delta CDE \cong$ ΔCBA

by HL (SSS, etc.)

or: Not Enough Information

e.

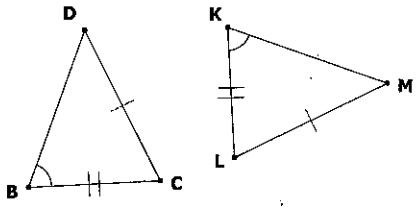


$\Delta BCD \cong$ ΔIHJ

by SAS (SSS, etc.)

or: Not Enough Information

f.

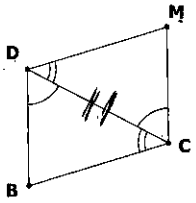


$\Delta BCD \cong$ _____

by _____ (SSS, etc.)

or: Not Enough Information

g.

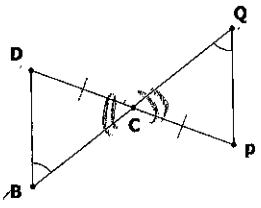


$\Delta BCD \cong$ ΔMDC

by ASA (SSS, etc.)

or: Not Enough Information

h.



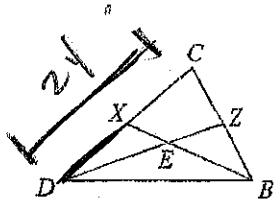
$\Delta BCD \cong$ ΔQCP

by AAS (SSS, etc.)

or: Not Enough Information

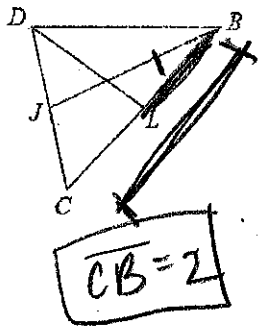
6. Medians

a. Find XD if $CD = 24$



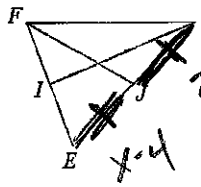
$\overline{XD} = 12$

b. Find CB if $LB = 1$



$\overline{CB} = 2$

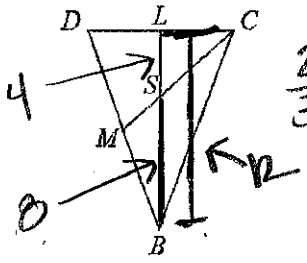
c. Find x if $JG = 2x - 11$ and $JE = x - 4$



$2x - 11 = x - 4$

$x = 7$

d. Find BS if $BL = 12$

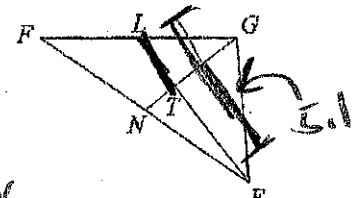


$\frac{2}{3} = \frac{x}{12}$

$24 = 3x$

$x = 8$

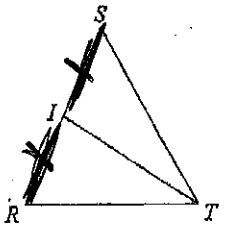
e. Find TL if $EL = 5.1$



$\frac{1}{3} = \frac{x}{5.1}$

$x = 1.7$

f. Find x if $IR = 2x - 8$ and $IS = x - 2$

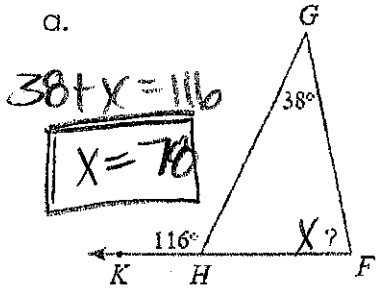


$2x - 8 = x - 2$

$x = 6$

7. Angles in Triangles

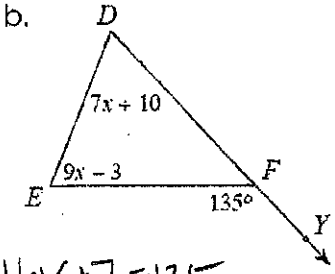
a.



$38 + x = 116$

$x = 78$

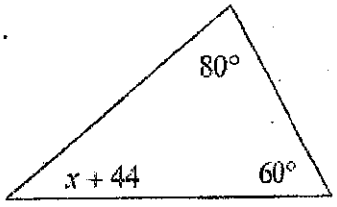
b.



$16x + 7 = 135$

$x = 16$

c.

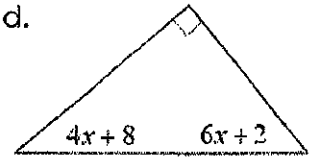


$140 + x + 44 = 180$

$184 + x = 180$

$x = -4$

d.

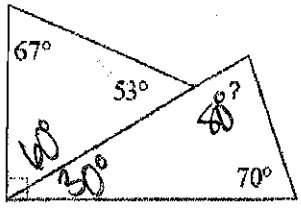


$10x + 10 + 90 = 180$

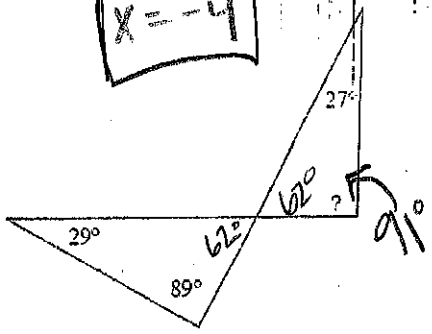
$10x + 100 = 180$

$x = 8$

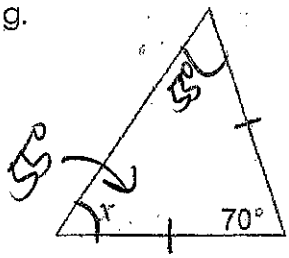
e.



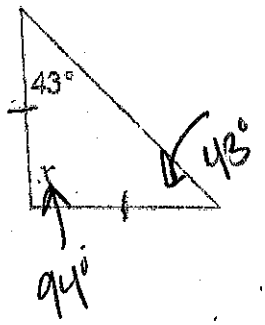
f.



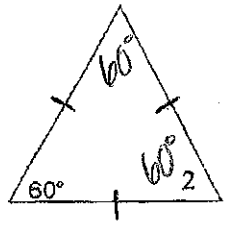
g.



h.



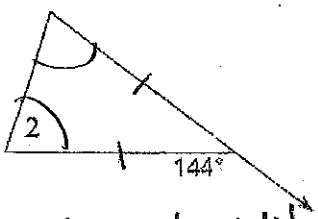
i. $m\angle 2 = 7x + 4$



$7x+4=60$

$\boxed{x=8}$

j. $m\angle 2 = 5x + 12$

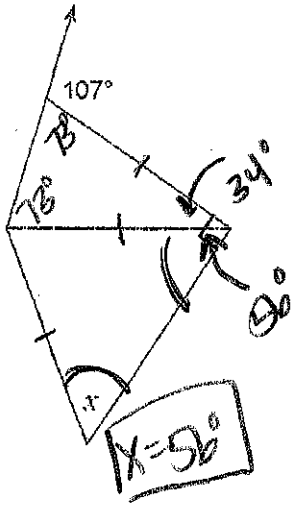


$10x+24=144$

$10y=120$

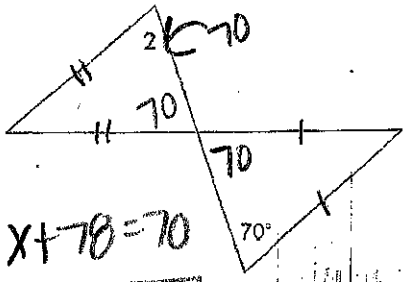
$\boxed{x=12}$

k.



$\boxed{x=56^\circ}$

l. $m\angle 2 = x + 78$



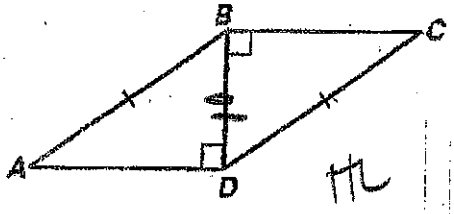
$x+78=70$

$\boxed{x=-8}$

Prove:

8.) **Given:** $\overline{AB} \cong \overline{CD}$, $\angle ADB$ *and* $\angle DBC$ **are right angles**

Prove: $\angle ABD \cong \angle CDB$



HL

Statements	Reasons
1. $\overline{AB} \cong \overline{CD}$; $\angle ADB$ & $\angle DBC$ Rt $\angle$'s	1. Given
2. $\overline{BD} \cong \overline{BD}$	2. Reflexive
3. $\triangle DAB \cong \triangle BCD$	3. HL
4. $\angle ABD \cong \angle CDB$	4. CPCTC