Unit 2: Triangles and Congruence

Name: _____

Math 2 Test Review

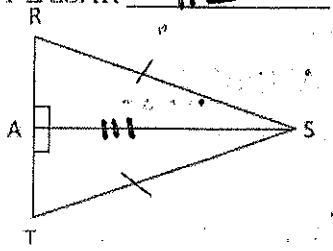
Triangle Congruence

1. List the five ways to prove that triangles are congruent.

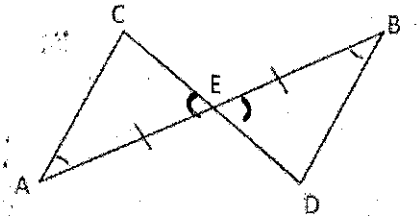
HL SAS ASA AAS SSS

2. For each pair of triangles, tell which of the above postulates will make the triangles congruent.

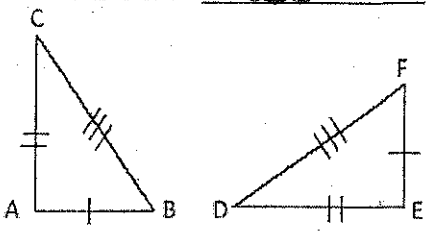
a. $\triangle SAT \cong \triangle SAR$ HL



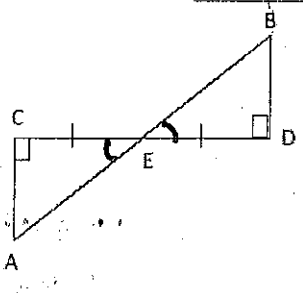
b. $\triangle AEC \cong \triangle BED$ ASA



c. $\triangle ABC \cong \triangle EFD$ SSS

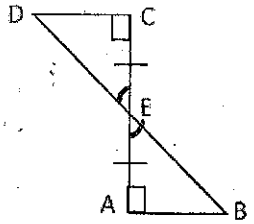


d. $\triangle CAE \cong \triangle DBE$ ASA



3. For each pair of triangles, tell (a) Are they congruent? (b) Write a triangle congruency statement. (c) Give the postulate that makes them congruent.

a.

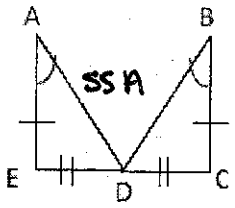


a. yes

b. $\triangle$ BAE $\cong \triangle$ DCE

c. ASA

b.

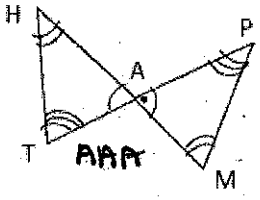


a. NO.

b. $\triangle$____ $\cong \triangle$ ____

c. _____

c.



a. NO

b. $\triangle$____ $\cong \triangle$ ____

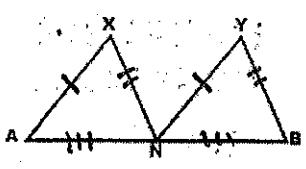
c. _____

4. GIVEN: N is the midpoint of $\overline{AB}$

$\overline{AX} \cong \overline{NY}$

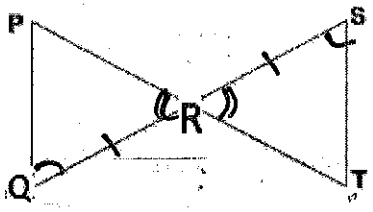
$\overline{NX} \cong \overline{BY}$

PROVE: $\angle X \cong \angle Y$



1. N is the midpoint of $\overline{AB}$	Given
2. $\overline{AN} \cong \overline{NB}$	Definition of Midpoint
3. $\overline{AX} \cong \overline{NY}$	Given
4. $\overline{NX} \cong \overline{BY}$	Given
5. $\triangle AXN \cong \triangle NYB$	SSS $\cong$
6. $\angle X \cong \angle Y$	CPCTC

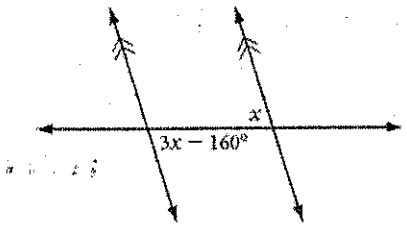
6. GIVEN: $\angle Q \cong \angle S$;
R is the midpoint of $\overline{QS}$.
PROVE: $\Delta PRQ \cong \Delta TRS$



1. $\angle Q \cong \angle S$	Given
2. R is midpoint of $\overline{QS}$	Given
3. $\overline{QR} \cong \overline{RS}$	Def. of midpoint
4. $\angle PRQ \cong \angle SRT$	Vertical Angle Theorem
5. $\Delta PRQ \cong \Delta TRS$	ASA $\cong$

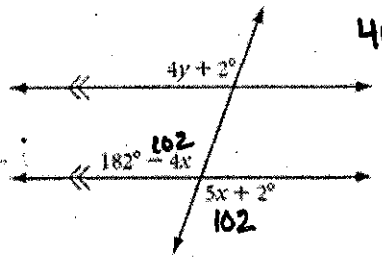
7. If one angle of a linear pair is obtuse, then the other angle is acute.
8. If $\angle A \cong \angle B$ and the supplement of $\angle B$ has measure 22°, then $m\angle A =$ 158°.
9. Find the measures of x and y in each problem. Make sure to show your work.

a.



$3x - 160 = x$
$2x = 160$
$x = 80$

b.

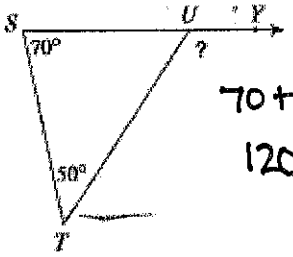


$5x + 2 = 182 - 4x$
$9x = 180$
$x = 20$

$4y + 2 = 102$
$4y = 100$
$y = 25$

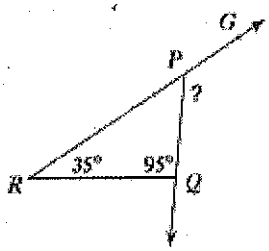
10. Find the indicated angle measure.

a.



$70 + 50 = ?$
$120 = ?$

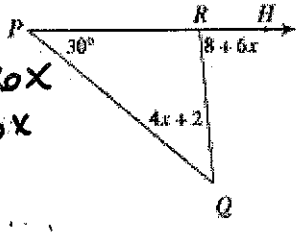
b.



$? = 35 + 95$
$? = 130$

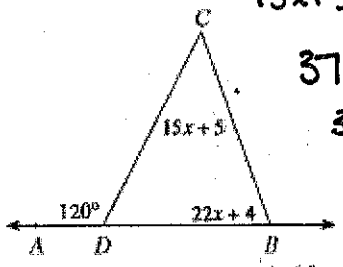
11. Solve for x.

a.



$4x + 2 + 30 = 8 + 6x$
$4x + 32 = 8 + 6x$
$24 = 2x$
$12 = x$

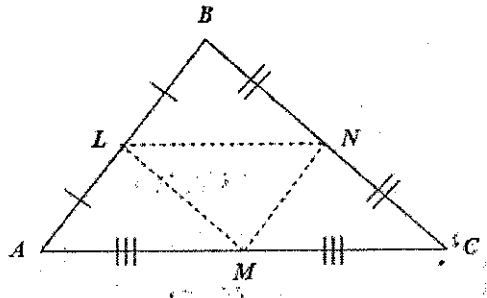
b.



$15x + 5 + 22x + 4 = 120$
$37x + 9 = 120$
$37x = 111$
$x = 3$

12.

For #20-27, consider the triangle below. In ΔABC, the midpoints of the sides are L, M, and N.



For #20-27.

20. $\overline{LM} \parallel$ $\overline{BC}$
21. $\overline{AB} \parallel$ $\overline{MN}$
22. If $AC = 14$, then $LN =$ 7.
23. If $MN = 8$, then $AB =$ 16.
24. If $NC = 3$, then $LM =$ 3.
25. If $LN = 5$, then $\overline{AC}$ $= 10$.
26. If $LM = 3x + 1$ and $BC = 10x - 6$, then $LM =$ 7.
27. If $NM = x - 1$ and $AB = 3x - 7$, then $AB =$ 8.

$BC = 2(LM)$
$10x - 6 = 2(3x + 1)$
$10x - 6 = 6x + 2$
$4x = 8$
$x = 2$

$AB = 2(NM)$
$3x - 7 = 2(x - 1)$
$3x - 7 = 2x - 2$
$x = 5$