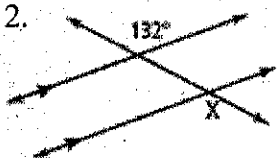
Name _____ 2:7 Date _____

A. Find x and describe the relationship between the angles.

1. 

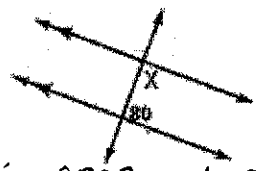
Alternate Int

2. 

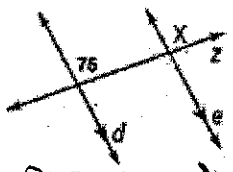
Alternate Exterior

3. 

Corresponding angles

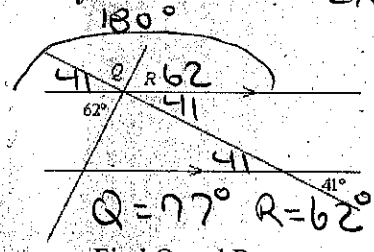
4. 

Consecutive interior

5. 

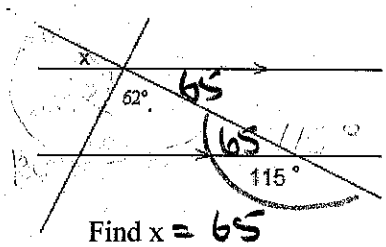
Corresponding angles

B. Show your work.

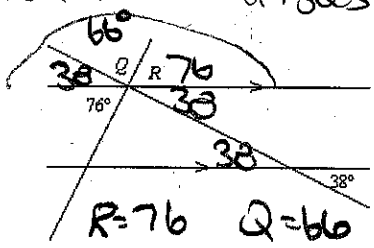
1. 

Q = 77° R = 62°

Find Q and R

2. 

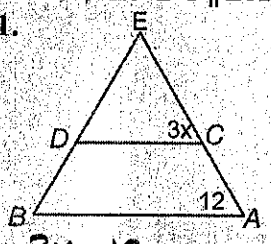
Find x = 65

3. 

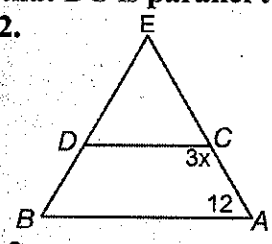
R = 76 Q = 66

Find Q and R

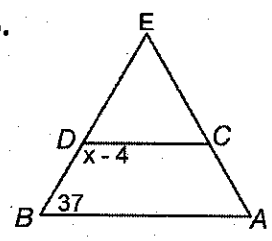
C. Assume DC ∥ BA, that DC is parallel to BA. Find X

1. 

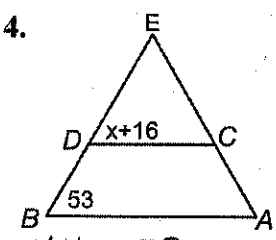
3x = 12
x = 4

2. 

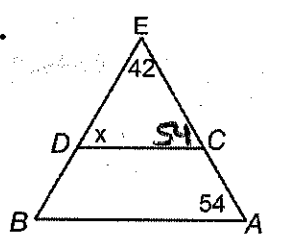
3x + 12 = 180
3x = 168
x = 56

3. 

37 + x - 4 = 180
33 + x = 180
-33 -33
x = 147

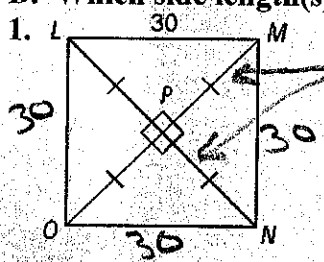
4. 

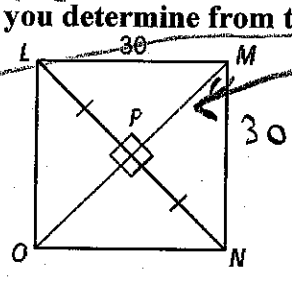
x + 16 = 53
-16 -16
x = 37

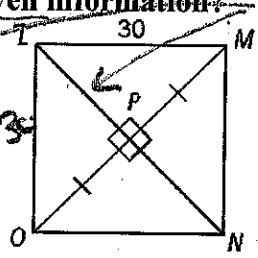
5. 

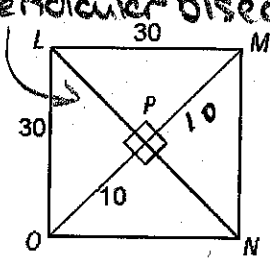
180 - 42 - 54 = x
84 = x

D. Which side length(s) can you determine from the given information? perpendicular bisector

1. 

2. 

3. 

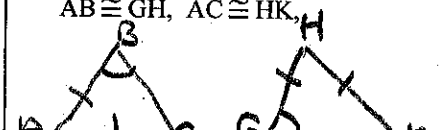
4. 

E – Draw a picture. Label congruent parts and Postulate if congruent. Write congruency statement.

1. ΔPDQ And ΔHKM
$\angle PDQ \cong \angle MHK$, $\overline{PD} \cong \overline{HM}$, $\overline{DQ} \cong \overline{HK}$ SAS

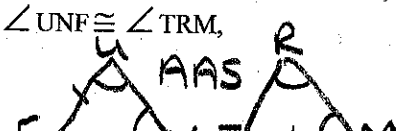
$\Delta PDQ \cong \Delta MHK$

2. ΔABC and ΔGHK
$\angle ABC \cong \angle HGK$,
$AB \cong GH$, $AC \cong HK$,



NEI

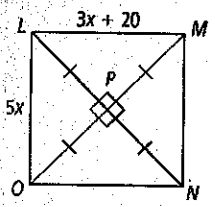
3. ΔFUN and ΔTRM
$FU \cong MT$, $\angle FUN \cong \angle RMT$,
$\angle UNF \cong \angle TRM$,



$\Delta FUN \cong \Delta TMR$

4. Find *LO*

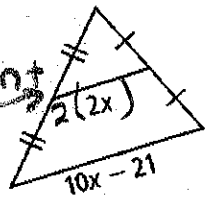
perpendicular bisector



3x + 20 = 5x
-3x 3x
20 = 2x
x = 10

5. Find x

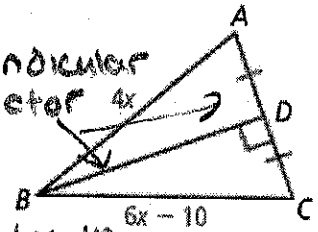
midsegment



2(2x) = 10x - 21
4x = 10x - 21
-10x -10x
$\frac{-6x}{-6} = \frac{-21}{-6}$
$x = 10\frac{1}{2}$

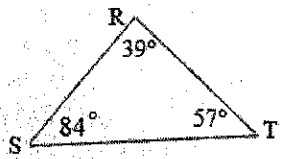
6. Find x

perpendicular Bisector



4x = 6x - 10
-6x -6x
-2x = -10
x = 5

F. Read the information and answer the questions. Show your work as applicable.

1. 

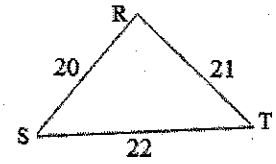
List the sides from smallest to biggest.

ST, SR, RT

2. Three pieces of 2x4 wooden boards have lengths of 7ft, 4 ft, and 5 ft. Could a triangle be made out of these boards? Why or why not.

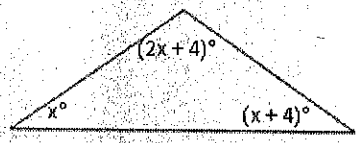
5 + 4 > 7

yes

3. 

List the angles from smallest to biggest.

L, S, R

4. 

Find the measure of the largest angle.

$x + 2x + 4 + x + 4 = 180$

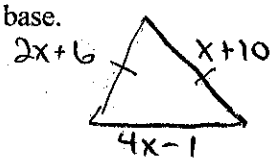
$4x + 8 = 180$

$-8 \quad -8$

$4x = 172$

$x = 43$

5. The legs of an isosceles triangle have lengths of 2x + 6 and x + 10. The base length has a length of 4x– 1. Find the length of the base.



$2x + 6 = x + 10$

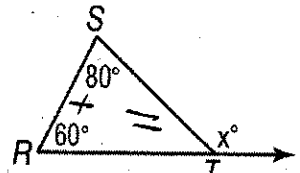
$-x \quad -x$

$x + 6 = 10$

$-6 \quad -6$

$x = 4$

6. Find x



$80 + 60 = 140 = x$

7. Given $\triangle CAT \cong \triangle DOG$ and $CT = 2x + 2$, and $DG = 8x - 4$, find the length of CT and DG.

$CT \cong DG$

congruency statement

$2x + 2 = 8x - 4$

$-2x \quad -2x$

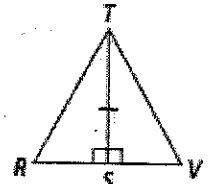
$2 = 6x - 4$

$+4 \quad +4$

$6 = 6x$

$1 = x$

8. What additional Information do you need to prove these triangles congruent using HL



already know

- RTS and VTS are right Δ's
- Shared leg TS is ≅ to both

Need to know

- hypotenuse RT ≅ TV

TV is perp bisector

9. Find *TS*.

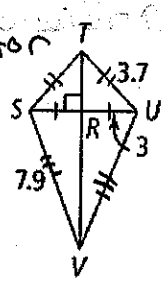
TS = 3.7

Find *UV*.

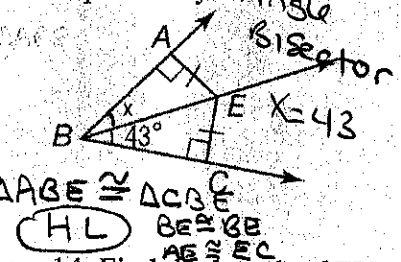
UV = 7.9

Find *SU*

SU = 6



10. Find the value of x, Explain why



Angle Bisector

$x = 43$

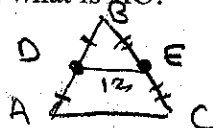
$\triangle ABE \cong \triangle ACE$

HL

$BE \cong BE$

$AE \cong EC$

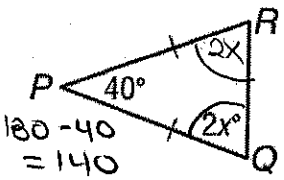
11. Draw triangle ABC. D is the midpt of AB and E is the midpt of BC. If DE is 12, what is AC?



DE is midsegment

AC = 24

12. Find x

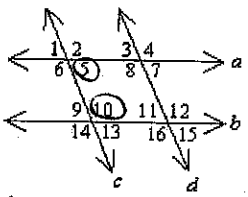


$180 - 40 = 140$

$2x + 2x = 140$

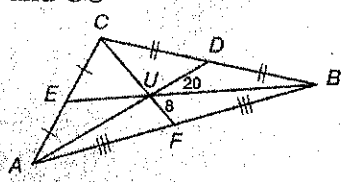
$4x = 140$

$x = 35$

13. 

If angles 5 & 10 were ≅ Could we prove the lines a and b Parallel? NO, they would need to be supplementary

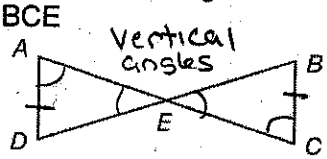
14. Find the length of EU and CU



EU is half UB = 10

CU is double UF = 16

15. $\angle A \cong \angle C$, $AD \cong CB$, Prove ADF congruent to BCE



yes AAS

16. Given $\triangle DOG \cong \triangle CAT$

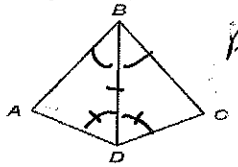
What is congruent to:

a. $DO \cong$ CA

b. $\angle G \cong \angle$ T

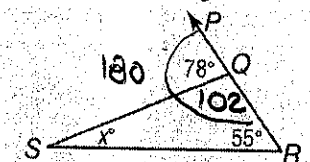
c. $OG \cong$ AT

17. Given BD bisects $\angle ABC$ and $\angle ADC$. Prove ABC congruent to CBD



ASA

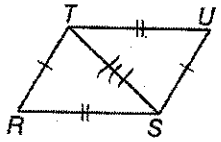
18. Find x



$x = 180 - 102 - 55$

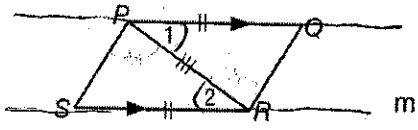
$x = 23$

19. Prove the triangles congruent



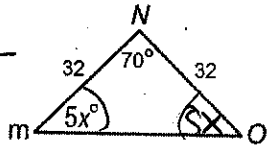
SSS

20. Prove the triangles congruent



SAS

21. Find x



$180 - 70 = \frac{110}{2} = 55$

$5x = 55$, $x = 11$