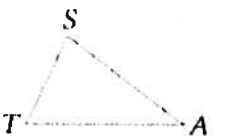
Name: KEY. DUE MONDAY

GEOMETRY UNIT 2 EXAM REVIEW PACKET!!!

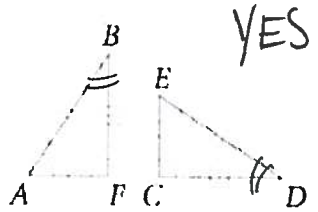
$\triangle SAT \cong \triangle GRE$. Complete each congruence statement.

1. $\angle S \cong$? $\angle G$
2. $\overline{GR} \cong$? $\overline{SA}$
3. $\angle E \cong$? $\angle T$
4. $\overline{AT} \cong$? $\overline{RE}$
5. $\triangle ERG \cong$? $\triangle TAS$
6. $\overline{EG} \cong$? $\overline{TS}$
7. $\triangle REG \cong$? $\triangle ATS$
8. $\angle R \cong$? $\angle A$



State whether the figures are congruent. Justify each answer.

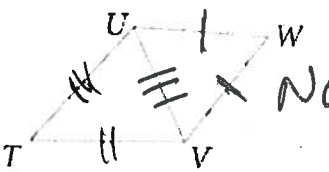
9. $\triangle ABF; \triangle EDC$



YES.

$\angle B \cong \angle D$ bc 3rd $\angle$ thm.
All corr. parts $\cong$.

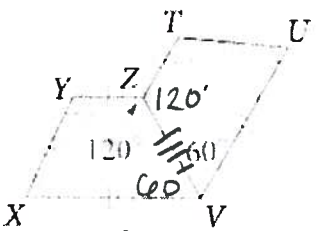
10. $\triangle TUV; \triangle UVW$



NO.

Not enough information

11. $\square XYZV; \square UTZV$



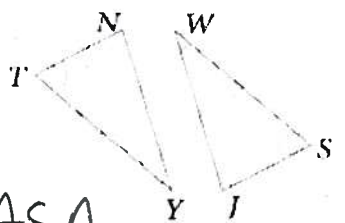
YES.

All corr. parts $\cong$

Lessons 4-2 and 4-3

Where possible, explain how you would use SSS, SAS, ASA, or AAS to prove the triangles congruent. If not possible, write *not possible*.

13.

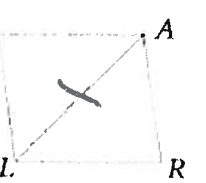


ASA

14.

SAS

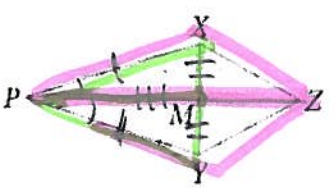
15.



Not enough information

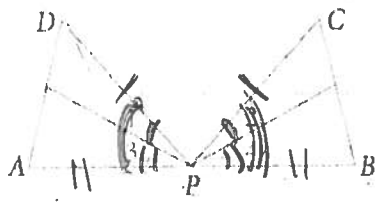
17. **Given:** $\overline{PX} \cong \overline{PY}$, $\overline{ZP}$ bisects $\overline{XY}$.

Prove: $\triangle PXZ \cong \triangle PYZ$



Statements	Reasons
$\overline{PX} \cong \overline{PY}$, $\overline{ZP}$ bisects $\overline{XY}$	Given
$\overline{XM} \cong \overline{MY}$	def'n bisects
$\overline{PM} \cong \overline{PM}$	Reflexive
$\triangle XPM \cong \triangle YPM$	SSS
$\angle XPM \cong \angle YPM$	CPCTC
$\overline{PZ} \cong \overline{PZ}$	Reflexive
$\triangle PXZ \cong \triangle PYZ$	SAS

18. Given: $\angle 1 \cong \angle 2, \angle 3 \cong \angle 4, \overline{PD} \cong \overline{PC}$, P is the midpoint of $\overline{AB}$.
Prove: $\triangle ADP \cong \triangle BCP$

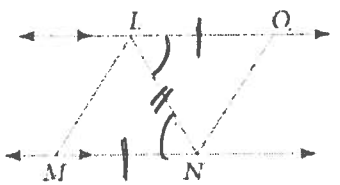


Statements	Reasons
$\angle 1 \cong \angle 2$ $\angle 3 \cong \angle 4$ $\overline{PD} \cong \overline{PC}$ P midpt $\overline{AB}$	Given
$\overline{AP} \cong \overline{PB}$	Def'n Midpt
$\angle DPA \cong \angle CPB$	angle addition pos.
$\triangle ADP \cong \triangle BCP$	SAS

Lesson 4-4

Explain how you would use SSS, SAS, ASA, or HL with CPCTC to prove each statement.

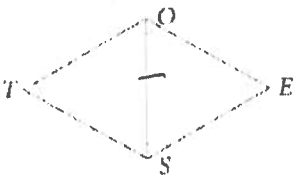
21. $\angle MLN \cong \angle ONL$



SAS

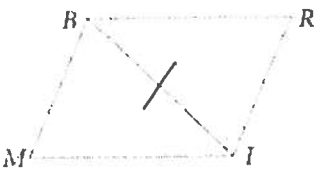
$\triangle MLN \cong \triangle ONL$	SAS
$\angle MLN \cong \angle ONL$	CPCTC

22. $\overline{TO} \cong \overline{ES}$



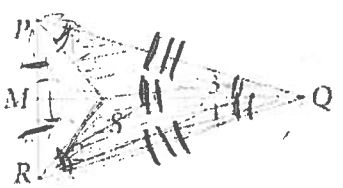
AAS

23. $\overline{MB} \cong \overline{RI}$



ASA

24. Given: $\angle 1 \cong \angle 2, \angle 3 \cong \angle 4$, M is the midpoint of $\overline{PR}$
Prove: $\triangle PMQ \cong \triangle RMQ$



Statements	Reasons
$\angle 1 \cong \angle 2$ $\angle 3 \cong \angle 4$ M midpt $\overline{PR}$	Given
$\overline{SQ} \cong \overline{SQ}$	Reflexive
$\triangle PSQ \cong \triangle RSQ$	AAS
$\overline{PQ} \cong \overline{RQ}$	CPCTC
$\overline{PM} \cong \overline{MR}$	Midpt
$\overline{QM} \cong \overline{QM}$	Reflexive
$\triangle PMQ \cong \triangle RMQ$	SSS

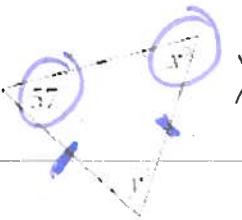
Lesson 4-5

Algebra **Find the value of each variable.**

26.

$X = 65°$

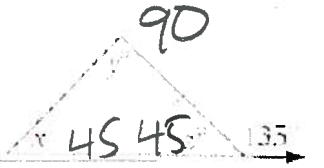
27.



$X = 57$

$Y = 66$

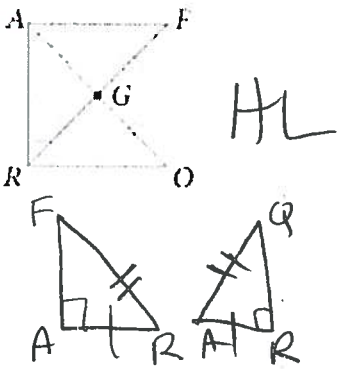
28.



Lessons 4-6 and 4-7

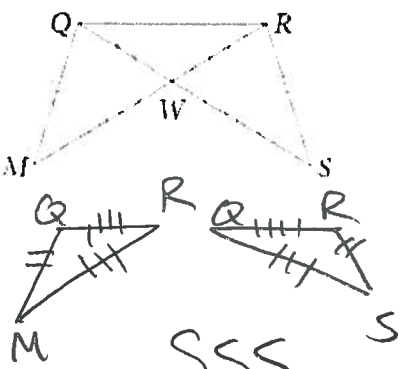
Name a pair of overlapping congruent triangles in each diagram. State whether the triangles are congruent by SSS, SAS, ASA, AAS, or HL.

31.



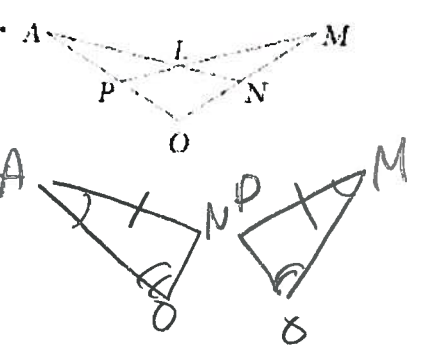
HL

32.



SSS

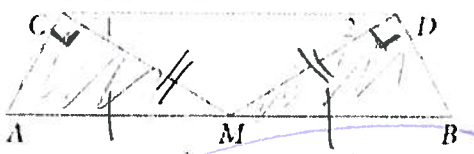
33.



AAS

34. **Given:** M is the midpoint of $\overline{AB}$, $\overline{MC} \perp \overline{AC}$, $\overline{MD} \perp \overline{BD}$, $\angle 1 \cong \angle 2$

Prove: $\triangle ACM \cong \triangle BDM$



Statements	Reasons
M midpt $\overline{AB}$	Given
$\overline{MC} \perp \overline{AC}$	
$\overline{MD} \perp \overline{BD}$	
$\angle 1 \cong \angle 2$	
$AM \cong MB$	midpt
$CM \cong MD$	Is. $\triangle$ Thm
$\triangle ACM \cong \triangle BDM$	HL

$\angle C$ and $\angle D$ rt $\angle$s | Def $\perp$ / all rt $\angle$s $\cong$

$\angle C \cong \angle D$

Write the first step of an indirect proof of each statement.

29. $\triangle ABC$ is a right triangle.

30. Points J, K, and L are collinear.

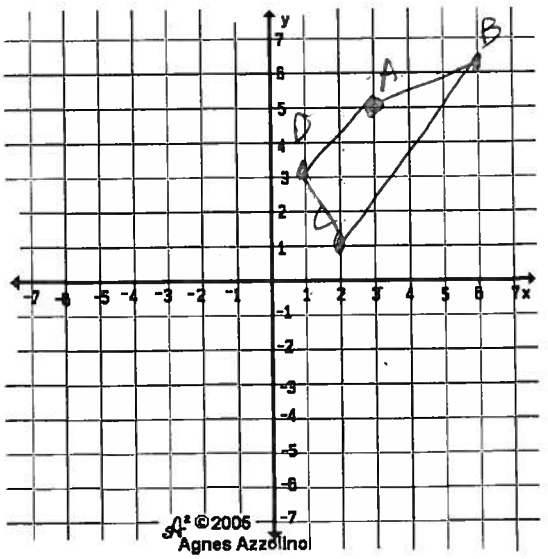
31. Lines l and m are not parallel.

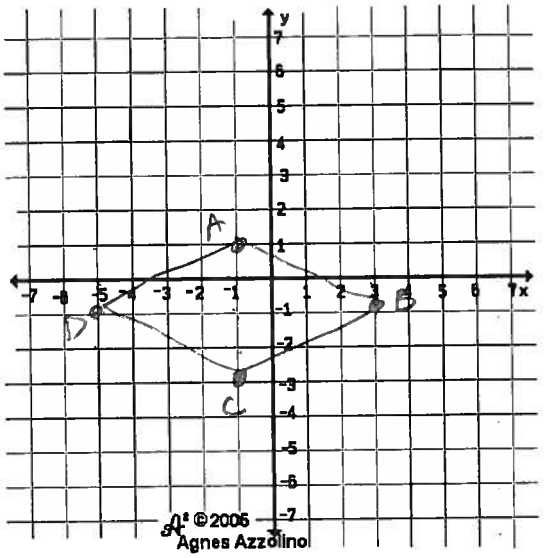
32. $\square XYZV$ is a square.

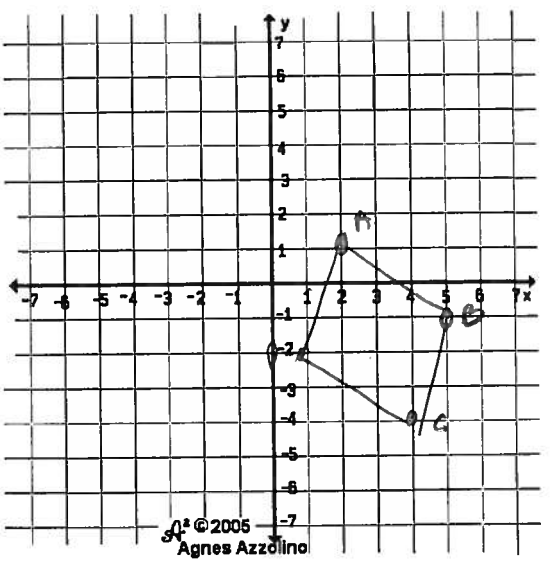
Lesson 6-1

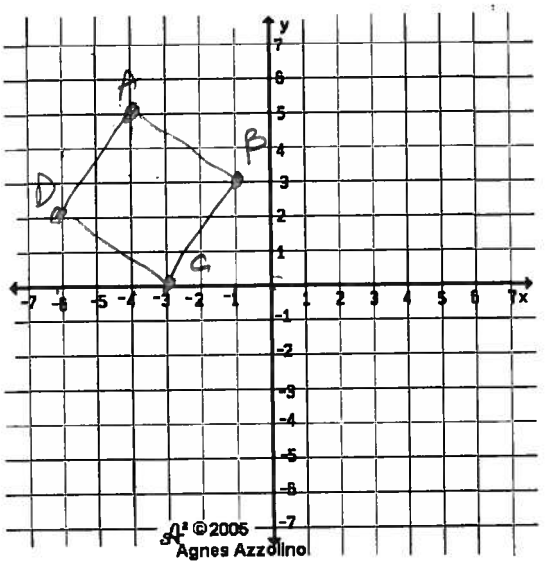
Graph the given points. Use slope and the Distance Formula to determine the most precise name for quadrilateral *ABCD*.

1. $A(3,5), B(6,5), C(2,1), D(1,3)$ Trapezoid
2. $A(-1,1), B(3,-1), C(-1,-3), D(-5,1)$ Rhombus
3. $A(2,1), B(5,-1), C(4,-4), D(1,-2)$ Parallelogram
4. $A(-4,5), B(-1,3), C(-3,0), D(-6,2)$ SQUARE





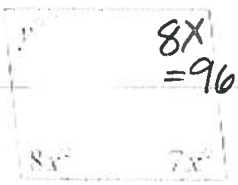




Lesson 6-2

Algebra **Find the values of the variables in each parallelogram.**

5.

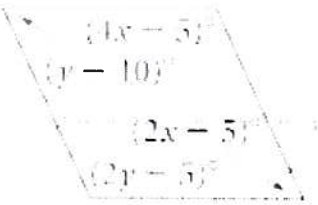


$8x+7x=180$

$15x=180$

$x=12°$ $y=84°$

6.



$y+10+2y+5=180$

$3y+15=180$

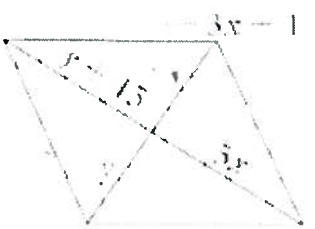
$y=55$

$4x-5+2x+5=180$

$6x=180$

$x=30$

7.



$y=3x+1$

$y+15=5x$

$3x+1+15=5x$

$3x+16=5x$

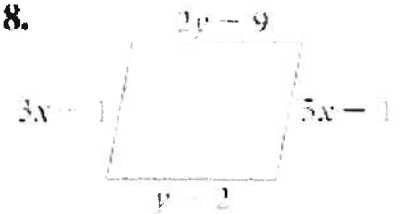
$16=2x$

$8=x$

$y=3(8)+1$

$y=25$

8.



$2y-9=y-2$

$y-9=-2$

$y=7$

$3x+1=5x-1$

$1=2x-1$

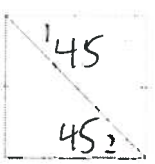
$2=2x$

$x=1$

Lesson 6-4

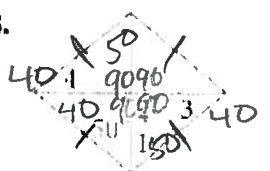
For each parallelogram, determine the most precise name and find the measures of the numbered angles.

17.



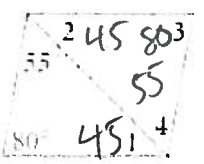
SQUARE

18.



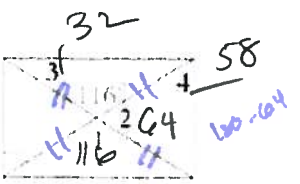
Rhombus

19.



Parallelogram

20.

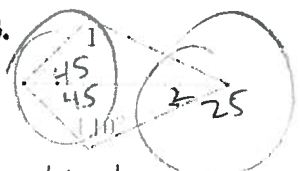


Rectangle

Lesson 6-5

Find $m\angle 1$ and $m\angle 2$.

23.

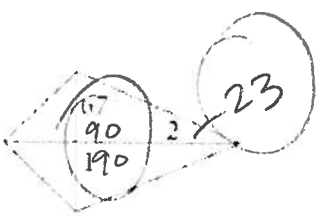


Kite

$m\angle 1=110$

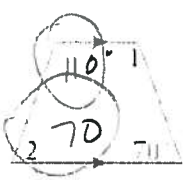
$m\angle 2=25$

24.



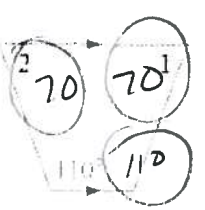
Kite

25.



I. Trap.

26.

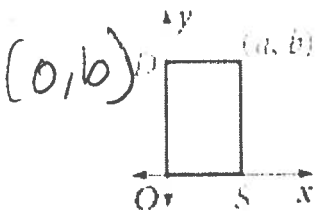


I. Trap

Lesson 6-6

Give coordinates for points *D* and *S* without using any new variables.

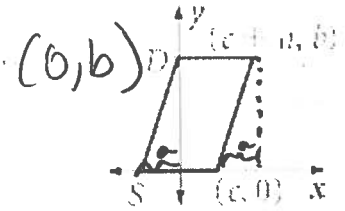
28. rectangle



(0,b)

(a,0)

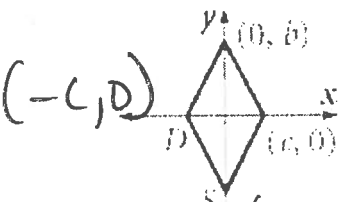
29. parallelogram



(0,b)

(-a,0)

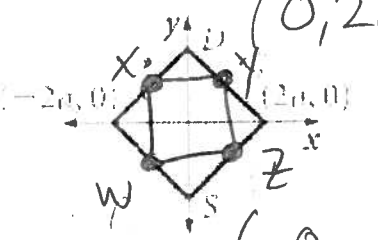
30. rhombus



(-c,0)

(0,-b)

31. square



(0,2a)

(0,-2a)

Lesson 6-7

32. For the figure in Exercise 31, use coordinate geometry to prove that the midpoints of the sides of a square determine a square.

$W = (-a, -a)$

$X = (-a, a)$

$Y = (a, a)$

$Z = (a, -a)$

$WX = \sqrt{(-a - -a)^2 + (a - -a)^2}$

$= \sqrt{2a^2}$

$XY = \sqrt{(a - -a)^2 + (a - a)^2}$

$= \sqrt{2a^2}$

$YZ = \sqrt{(a - a)^2 + (-a - a)^2}$

$= \sqrt{2a^2}$

$ZW = \sqrt{(a - a)^2 + (-a - a)^2}$

$= \sqrt{2a^2}$

slopes

WX = undefined

XY = 0

YZ = undefined

ZW = 0

* opp slope are same → //
* cons. slopes opp rec → ⊥
* all sides same length.

SQUARE.