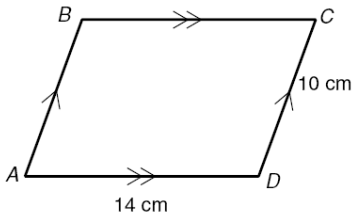
Geometry A **Name** _____
6.1 Properties of Parallelograms **Hour** _____ **Date** _____

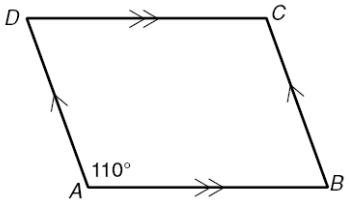
Assignment

Find each indicated measure in parallelogram *ABCD*.



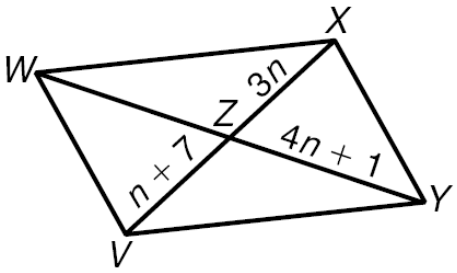
1. AB = _____
2. BC = _____

Find each indicated measure in parallelogram *ABCD*.



3. $m\angle B$ = _____
4. $m\angle C$ = _____
5. $m\angle D$ = _____

***VWXY* is a parallelogram. Find each indicated measure**. **Show all calculations.**



6. VX = _____
7. XZ = _____
8. ZW = _____
9. WY = _____

Suppose that $\overline{AB}$ has endpoints *A*(-3, 6) and *B*(1, -4).

10. Find the length of $\overline{AB}$.

11. Find the midpoint of $\overline{AB}$.

12. Find the slope of $\overline{AB}$

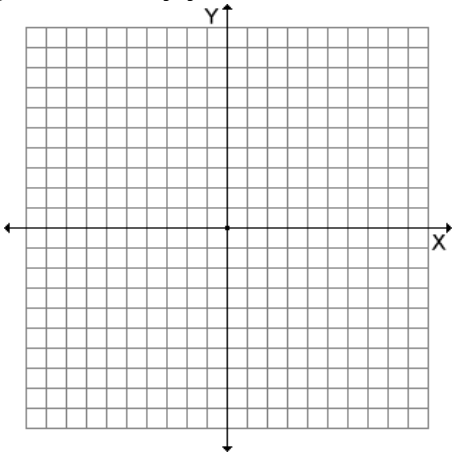
Geometry A **Name _____**

6.2 Proving a Quadrilateral is a Parallelogram **Hour _____ Date _____**

Assignment

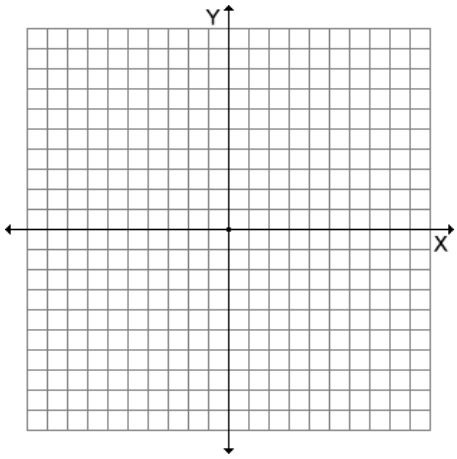
Determine whether a figure with the given vertices is a parallelogram. Justify your answer.

1. *Q*(-6, -6), *R*(2, 2), *S*(-1, 6), *T*(-5, 2); **Show all calculations.**
   Use the **slope formula.**



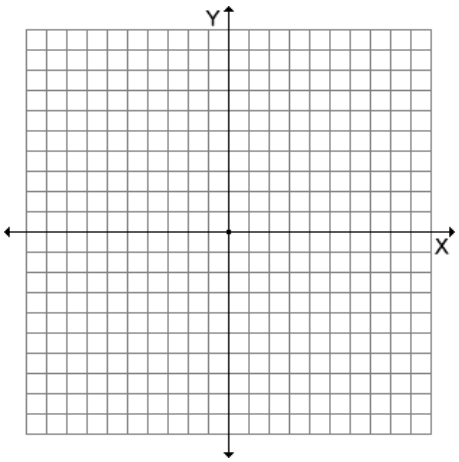
Parallelogram? _____ Justification _____

2. *W*(-6, -5), *X*(-1, -4), *Y*(0, -1), *Z*(-5, -2); **Show all calculations.**
   Use the **distance formula.**



Parallelogram? _____ Justification _____

3. *H*(5, 6), *J*(9, 0), *K*(8, -5), *L*(3, 2); **Show all calculations.**
   Use the **midpoint formula.**



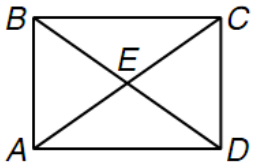
Parallelogram? _____ Justification _____

Geometry A **Name** _____
6.3 Properties of Rectangles **Hour** _____ **Date** _____

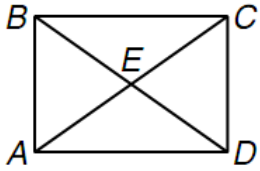
Assignment

***ABCD* is a rectangle.**

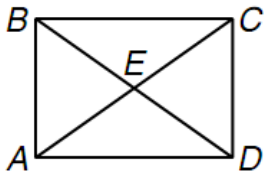
1. If $AC = 2x + 13$ and $DB = 4x - 1$, find x. **Show your calculations.**



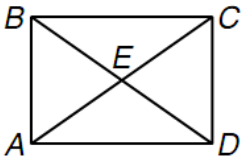
2. If $AC = x + 3$ and $DB = 3x - 19$, find AC. **Show your calculations.**



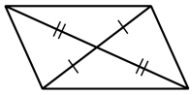
3. If $m\angle DAC = 2x + 4$ and $m\angle BAC = 3x + 1$, find x. **Show your calculations.**



4. If $m\angle BDC = 7x + 1$ and $m\angle ADB = 9x - 7$, find $m\angle CBD$. **Show your calculations.**



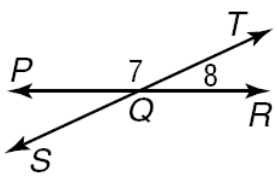
5. Is there enough information to state that the figure below is a parallelogram? _____



Justification _____

6. *R* is between *J* and *K*. Find *n* if $JR = 2n - 12$, $RK = 3n + 10$, and $JK = 33$ cm.

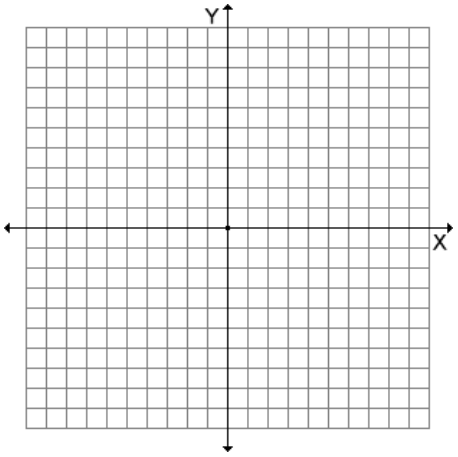
7. If $m\angle 7 = 5x - 5$ and $m\angle 8 = 4x + 14$, find the value of x.



Geometry A **Name** _____
6.4 Proving a Quadrilateral is a Rectangle **Hour** _____ **Date** _____

Assignment

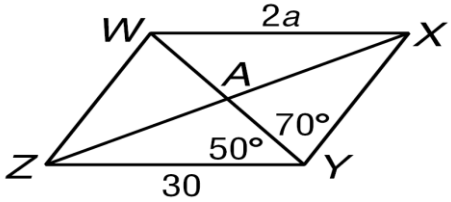
1. Determine whether $W(-4, 5)$, $X(6, 0)$, $Y(3, -6)$, and $Z(-7, -1)$ are vertices of a rectangle. **Show all work.** (Hint: use the midpoint formula and distance formula).



WXYZ is / is not a rectangle.

Justification: _____.

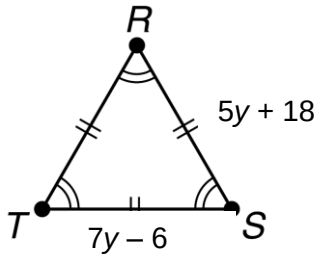
2. *WXYZ* is a parallelogram. Find each indicated value.



a = _____ $m\angle YWX$ = _____

$m\angle YWZ$ = _____ $m\angle XYZ$ = _____

3. Find the perimeter of ΔRST.



4. **Given:** $\angle A$ and $\angle B$ are vertical angles.
Conjecture: $\angle A \cong \angle B$
Which of the following would be a counterexample to the conjecture?

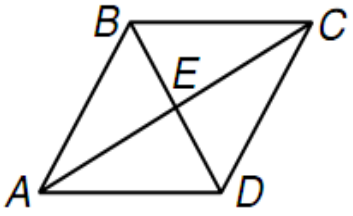
A. $m\angle A = 45$ and $m\angle B = 45$
B. $m\angle A = 100$ and $m\angle B = 80$
C. $m\angle A = 90$ and $m\angle B = 90$
D. None of the above, because the conjecture is true.

Geometry B **Name** _____

6.5 Properties of Rhombi and Squares **Assignment** **Hour** _____ **Date** _____

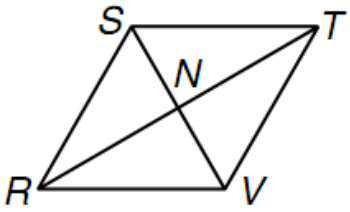
In rhombus *ABCD*, *BE* = 18, and *AE* = 24.

1. *AB* = _____
2. *BC* = _____
3. *AD* = _____
4. *DE* = _____
5. *CE* = _____
6. *AC* = _____
7. *DB* = _____
8. $m\angle AED$ = _____



In rhombus *STVR*, $m\angle STN = 25^o$.

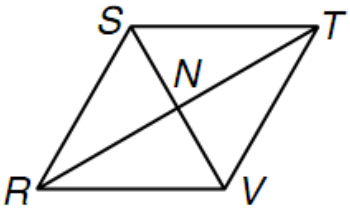
9. $m\angle VTN$ = _____
10. $m\angle TVS$ = _____
11. $m\angle RVS$ = _____
12. $m\angle SRT$ = _____
13. $m\angle VRT$ = _____
14. $m\angle RST$ = _____
15. $m\angle STV$ = _____
16. $m\angle RNV$ = _____



In rhombus *RSTV*, *RS* = 5*y* + 2, *ST* = 3*y* + 6, *NV* = 6, and $m\angle NTV = 30^o$.

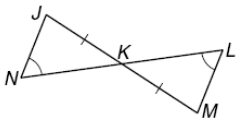
17. Find the value of *y*. **Show all calculations.**

18. Find *TV*. **Show all calculations.**

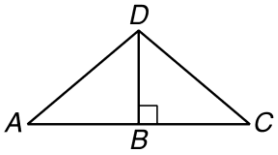


Identify the triangle congruence postulate that could be used to prove that each pair of triangles are congruent based on the given information. If it is not possible to prove that the triangles are congruent, choose "not possible."

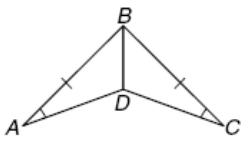
19.



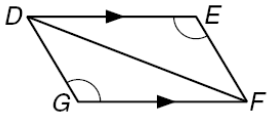
20.



21.



22.



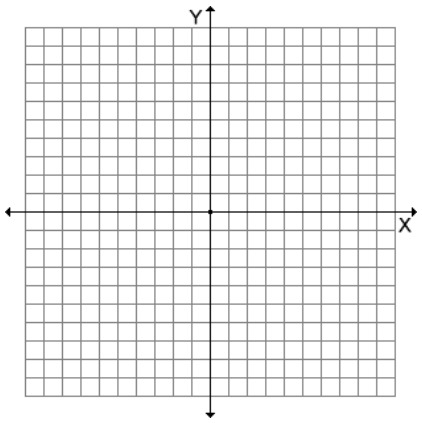
Geometry A **Name _____**

6.6 Proving that a Quadrilateral is a Rhombus or a Square **Hour _____ Date _____**

Assignment

Given each set of vertices, determine whether *QRST* is a parallelogram, rhombus, rectangle, or square. List all that apply. Justify your reasoning. Show all calculations.

1. *Q*(-4, 5), *R*(4, 1), *S*(1, -5), *T*(-7, -1)



QRST is a (circle all that apply)

Parallelogram *Rectangle* *Rhombus* *Square*

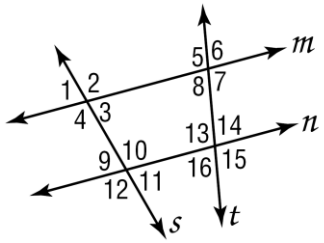
2. Which one of the following pairs of slopes are slopes corresponding to parallel lines?

A. $\frac{5}{3}$ and $\frac{6}{10}$ **B.** $\frac{5}{3}$ and $\frac{20}{12}$ **C.** $-\frac{10}{6}$ and $\frac{5}{3}$ **D.** $\frac{5}{3}$ and $-\frac{9}{15}$

3. Which one of the following pairs of slopes are slopes corresponding to perpendicular lines?

A. $\frac{5}{3}$ and $\frac{6}{10}$ **B.** $\frac{5}{3}$ and $\frac{20}{12}$ **C.** $-\frac{10}{6}$ and $\frac{5}{3}$ **D.** $\frac{5}{3}$ and $-\frac{9}{15}$

4. Which angle pair are $\angle 11$ and $\angle 16$ in the figure at the right?



A. Vertical Angles (VA) **B.** Corresponding Angles (CA)

C. Alternate Interior Angles (AIA) **D.** Alternate Exterior Angles (AEA)

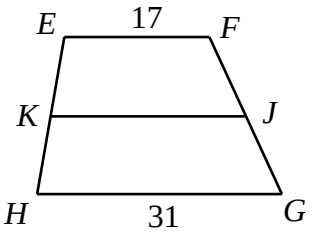
E. Consecutive Interior Angles (CIA)

Geometry A
6.7 Trapezoids

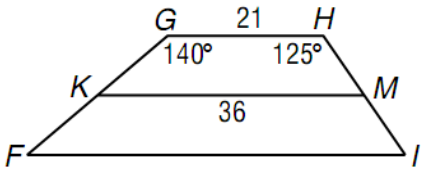
Name _____
Hour _____ **Date** _____

Assignment

1. For trapezoid *EFGH*, *J* and *K* are the midpoints of the legs. Find *JK*. **Show all calculations.**



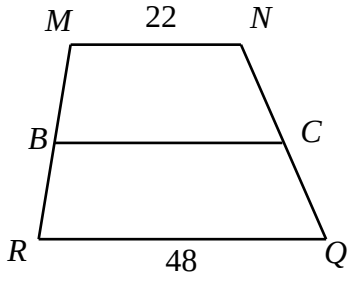
2. For trapezoid *FGHI*, *K* and *M* are the midpoints of the legs. Find *FI*, $\angle F$ and $\angle I$. **Show all calculations.**



3. In trapezoid *MNQR*, *B* and *C* are midpoints of the legs. Let $\overline{AD}$ be the median of *MNCB*.

a. Draw and label $\overline{AD}$ on the figure.

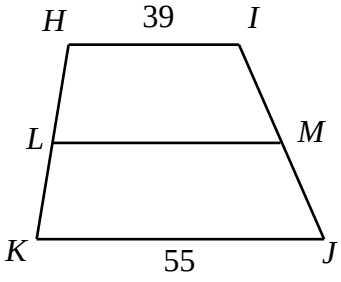
b. Find *AD*.
Show all calculations.



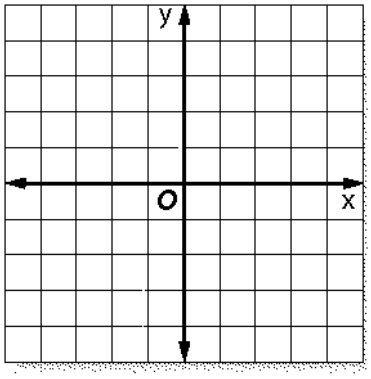
4. In trapezoid *HIJK*, *L* and *M* are midpoints of the legs. Let $\overline{NP}$ be the median of *LMJK*.

a. Draw and label $\overline{NP}$ on the figure.

b. Find *NP*.
Show all calculations.



5. Verify that *A*(-3, -2), *B*(4, -2), *C*(-1, 5), and *D*(2, 5), are vertices of a trapezoid. Justify your answer.



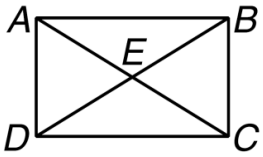
ABCD is a trapezoid.

Justification: _____

6. *CDEF* is a parallelogram. $m\angle D = 47^o$. Find the indicated values.

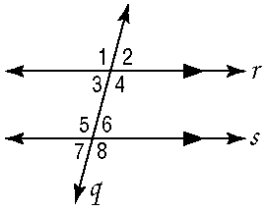
$m\angle C =$ _____ $m\angle E =$ _____ $m\angle F =$ _____

7. *ABCD* is a rectangle. If $m\angle DAC = 7x + 1$ and $m\angle BAC = 9x - 7$, find $m\angle DCA$. **Show all calculations.**



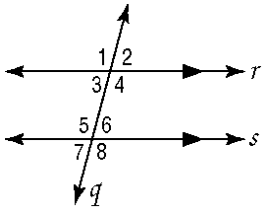
In problems #8 and 9, *r* || *s*. Solve for *x*, then find the measures of the indicated angles.

8. $m\angle 4 = x + 35,\quad m\angle 6 = 4x + 10$



$x =$ _____, $m\angle 4 =$ _____ , $m\angle 2 =$ _____

9. $m\angle 5 = 6x + 12,\quad m\angle 4 = 7x - 9$



$x =$ _____, $m\angle 4 =$ _____ , $m\angle 6 =$ _____

State the property, definition, theorem, or postulate that justifies each statement.

10. $CD = CD$. _____

11. If $\overline{AB} \cong \overline{BC}$ and $\overline{BC} \cong \overline{CE}$, then $\overline{AB} \cong \overline{CE}$. _____

12. If *N* is between *M* and *P*, then $MN + NP = MP$. _____

13. If $\overline{MN} \cong \overline{PQ}$, then $\overline{PQ} \cong \overline{MN}$. _____

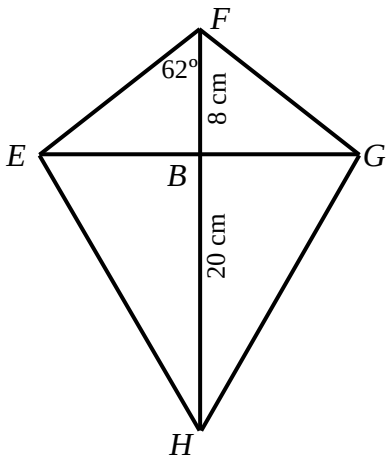
14. If $m\angle 7 + m\angle 8 = 85^o$ and $m\angle 8 = 41^o$, then $m\angle 7 + 41^o = 85^o$. _____

15. If *R* is the midpoint of $\overline{QT}$, then $\overline{QR} \cong \overline{RT}$. _____

Geometry A **Name _____**
6.8 Kites & Quadrilaterals **Hour _____ Date _____**

Assignment

1. *EFGH* is a kite with ends *F* and *H*. If *EG* = 30 cm, find the indicated lengths and angle measures.



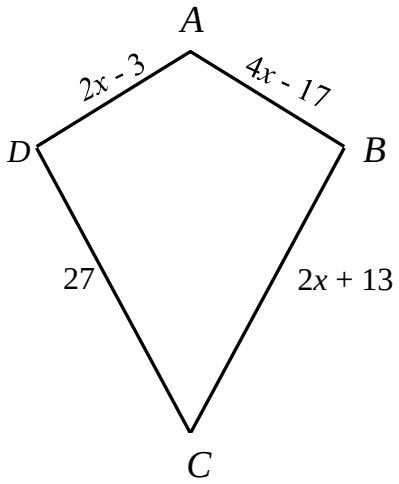
EB = _____ *BG* = _____

EF = _____ *FG* = _____

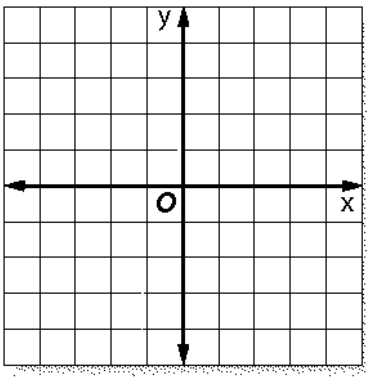
EH = _____ *GH* = _____

m∠*GBH* = _____ *m*∠*BEF* = _____

2. Given ABCD is a kite with ends *A* and *C*, solve for *x* and find all missing side lengths.



3. Verify that *A*(1, -3), *B*(4, -2), *C*(3, 1), and *D*(-2, 1), are vertices of a kite. Justify your answer.



ABCD is a kite.

Justification: _____

For # 4-11, fill in the blanks.

4. The diagonals of a parallelogram _____ one another.

5. Opposite angles of a parallelogram are _____.

6. Opposite sides of parallelograms are _____ and _____.

7. Consecutive angles of parallelograms are _____.

8. The diagonals of a rectangle are _____.

9. All angles of a rectangle are _____.

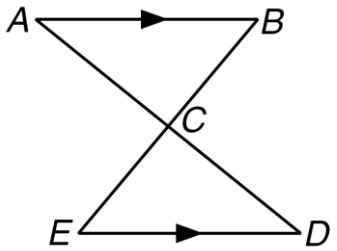
10. The diagonals of a rhombus are _____ and _____.

11. All sides of a rhombus are _____.

12. Complete the following proof:

Given: C is the midpoint of $\overline{AD}$
C is the midpoint of $\overline{BE}$

Prove: $\Delta ABC \cong \Delta DEC$



Statements	Reasons
1. C is the midpoint of $\overline{AD}$	1.
2.	2. Midpoint Theorem
3. C is the midpoint of $\overline{BE}$	3.
4.	4. Midpoint Theorem
5.	5. Vertical Angles Theorem
6. $\Delta ABC \cong \Delta DEC$	6.

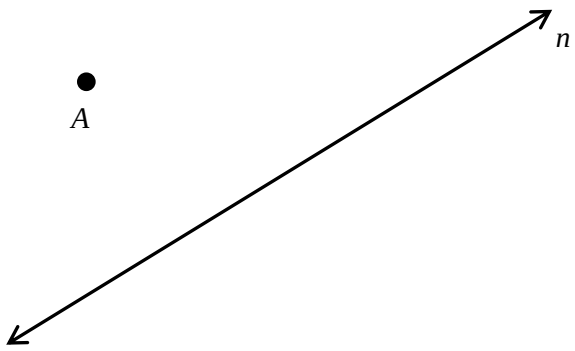
Geometry A **Name _____**
6.9 Constructions of Quadrilaterals **Hour _____ Date _____**

Assignment

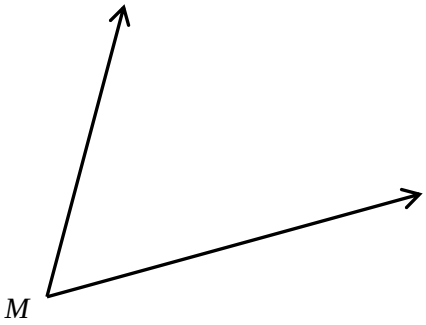
1. Construct a parallelogram**.**

2. Construct a square**.**

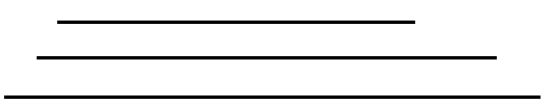
3. Construct a line that is parallel to line *n*, passing through point *A*.



4. Construct the bisector of $\angle M$.

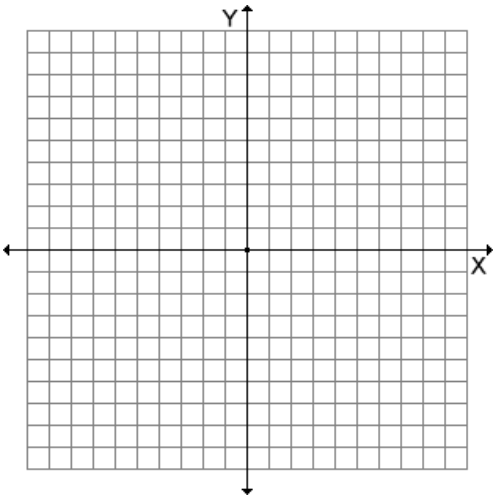


5. Construct a triangle with side lengths given below.



6. Determine whether the quadrilateral with the given vertices is a parallelogram, rectangle, rhombus, or square. Circle all that apply. Show all calculations.

B(0, 3), *E*(6, -2), *F*(1, -8), *G*(-5, -3)



BEFG is a (circle all that apply)

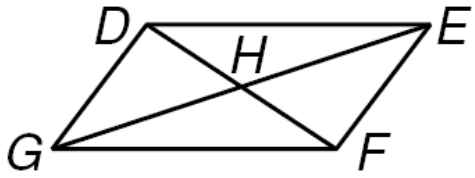
Parallelogram Rectangle Rhombus Square

Geometry B **Name** _____
Chapter 6 Additional Practice **Hour** _____ **Date** _____

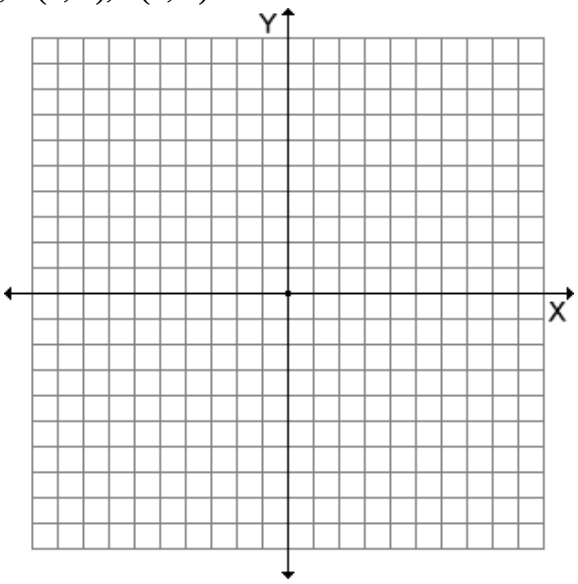
Assignment

Slope	$m = \frac{y_2 - y_1}{x_2 - x_1}$
Midpoint	$\left(\frac{x_1 + x_2}{2}, \frac{y_2 + y_1}{2} \right)$
Distance	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

3. In parallelogram *DEFG*, $m\angle FGE = 4x + 1$ and $m\angle DEG = 6x - 15$. Find $m\angle FGE$.

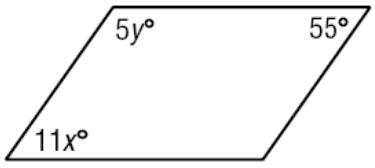


4. Suppose parallelogram *HJKL* has vertices: *H*(1, 1), *J*(2, 3), *K*(6, 3), *L*(5, 1).
Find the coordinates of the intersection of the diagonals.
Show algebraic work! (Just graphing is not sufficient)

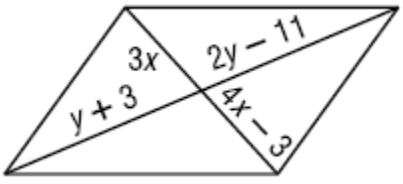


For #5 and 6, find the values of *x* and *y* so that each figure is a parallelogram. **Show all calculations.**

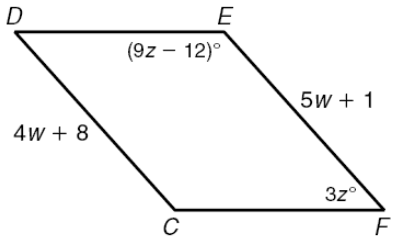
5.



6.



7. *CDEF* is a parallelogram. Find each indicated value. **Show all calculations.**



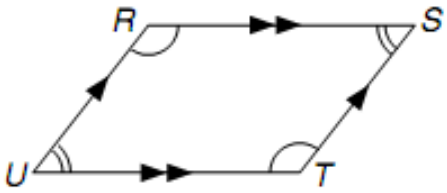
CD = _____

EF = _____

$m\angle F$ = _____

$m\angle C$ = _____

8. In quadrilateral *RSTU*, $m\angle R = 6x - 4$ and $m\angle S = 2x + 8$. Find the measure of each angle. **Show all calculations.**



$m\angle R$ = _____

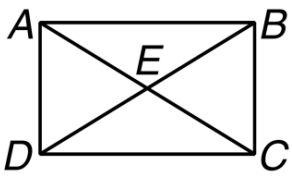
$m\angle S$ = _____

$m\angle T$ = _____

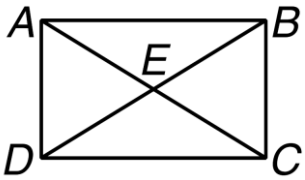
$m\angle U$ = _____

9. *ABCD* is a rectangle.

a. If $AC = 5x - 9$ and $DB = 2x + 12$, find *x*. **Show all calculations.**



b. If $BE = 8y - 4$ and $EC = 7y + 3$, find *DB*. **Show all calculations.**



10. In rhombus *DKLM*, *ML* = 40, *MK* = 64, and *LA* = 24.

a. *AM* = _____

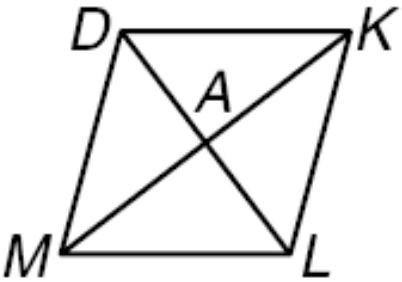
b. *KL* = _____

c. *DL* = _____

e. *MD* = _____

f. *KA* = _____

g. *DK* = _____



d. AD = _____

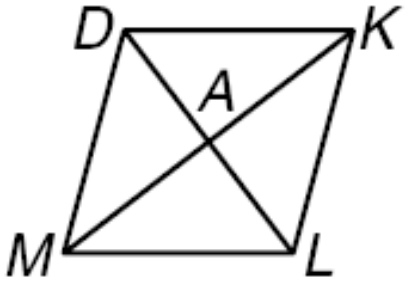
11. In rhombus $DKLM$, $m\angle MDA = 52^{o}$.

a. $m\angle DKA$ = _____ e. $m\angle DKL$ = _____

b. $m\angle LAK$ = _____ f. $m\angle MAD$ = _____

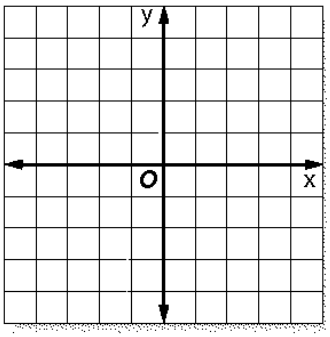
c. $m\angle LMA$ = _____ g. $m\angle MLK$ = _____

d. $m\angle KLA$ = _____ h. $m\angle DMA$ = _____



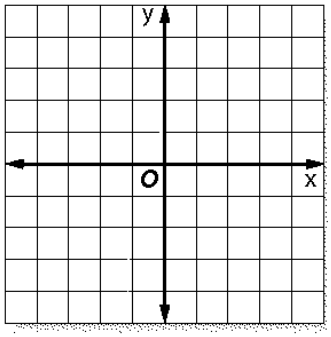
For #12 and 13, determine whether a figure with the given vertices is a parallelogram.
Justify your answer algebraically.

12. $A(-2, 3)$, $B(4, 2)$, $C(5, -3)$, $D(-1, -2)$



Is $ABCD$ a parallelogram? _____ Justification _____

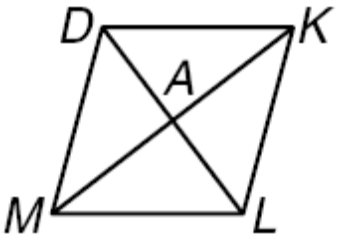
13. $G(-3, 0)$, $H(2, 2)$, $J(1, -2)$, $K(-4, -3)$



Is $GHJK$ a parallelogram? _____ Justification _____

14. Complete each statement about parallelogram *LMNP*. Justify your answer.

Statement	Justification
a. $\overline{DM} \parallel$ _____	a. _____
b. $\angle DKL \cong$ _____	b. _____
c. $\overline{DK} \cong$ _____	c. _____
d. $\overline{AL} \cong$ _____	d. _____



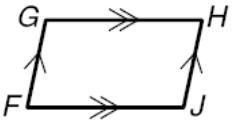
For #15-18, determine whether each quadrilateral is a <u>parallelogram</u> *based on the given information*. Justify your answer.

17. Is there enough information to state that the figure at the left is a parallelogram? _____

Justification _____

_____

18. Is there enough information to state that the figure at the left is a parallelogram? _____

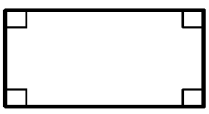


Justification _____

_____

For #19 and 20, determine whether each quadrilateral is a <u>rectangle</u> based on the given information. Justify your answer.

19. Is there enough information to state that the figure at the left is a rectangle? _____



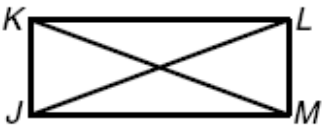
Justification _____

_____

20. Is there enough information to state that the figure at the left is a rectangle? _____

JKLM is a parallelogram.

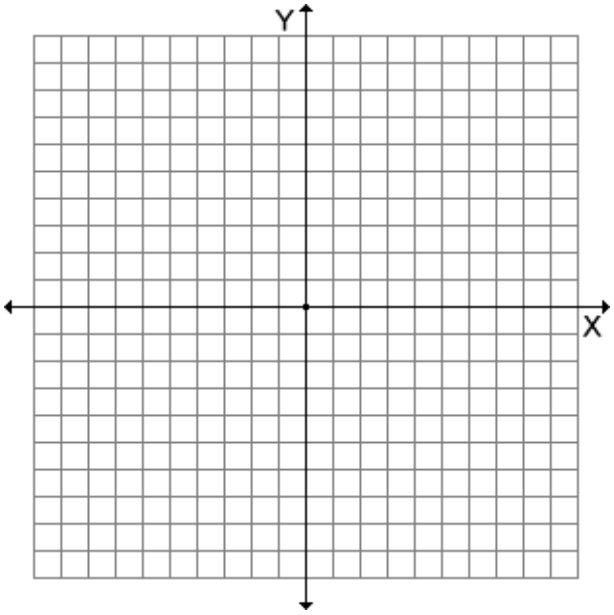
$\overline{KM} \cong \overline{JL}$



Justification _____

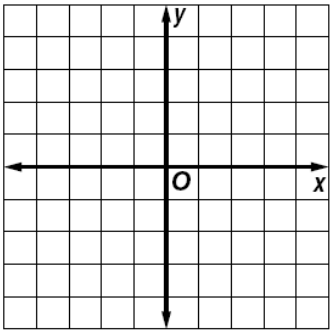
_____

22. *R*(-2, 5), *S*(1, 3), *M*(-3, -4), *Y*(-6, -2)



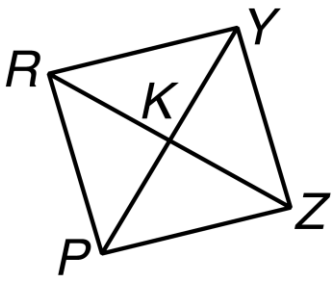
What type of figure(s) is *RSMY*? _____

23. *T*(4, 1), *U*(3, -1), *X*(-3, 2), *Y*(-2, 4)



What type of figure(s) is *TUXY*? _____

24. *PRYZ* is a rhombus with $RK = 4y + 1$, $ZK = 7y - 14$, $PK = 3x - 1$, and $YK = 2x + 6$. Find each indicated value. **Show your calculations.**



a. *PY* = _____

b. *RK* = _____

c. *RZ* = _____

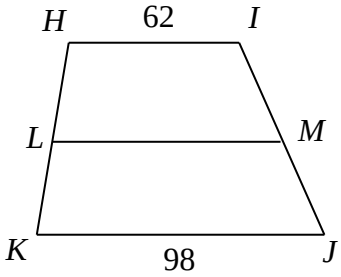
d. $m\angle YKZ$ = _____

25. The bases of a trapezoid are 12 and 26. Find the length of the median. **Show all calculations.**

26. In trapezoid *HIJK*, *L* and *M* are midpoints of the legs. Let $\overline{NP}$ be the median of *LMJK*.

a. Draw and label $\overline{NP}$ on the figure.

b. Find *NP*. **Show all calculations.**



For #27-31, write TRUE or FALSE.

27. The diagonals of a rhombus are always perpendicular. _____

28. Every parallelogram is a rhombus. _____

29. The diagonals of a rectangle are always congruent. _____

30. If a quadrilateral is both a rhombus and a rectangle, then it is a square. _____

31. A rhombus is a quadrilateral with exactly one pair of parallel sides. _____

For #32-34, circle the correct answer.

32. Squares are (sometimes, always, never) rectangles.

33. Parallelograms are (sometimes, always, never) rectangles.

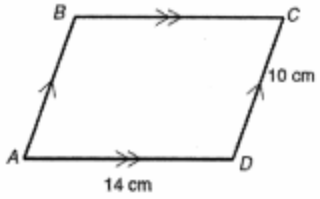
34. Rhombi are (sometimes, always, never) parallelograms.

Geometry A
6.1 Properties of Parallelograms

Name Key
Hour _____ **Date** _____

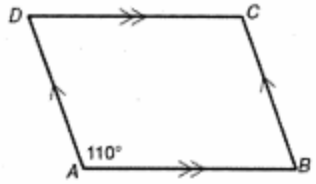
Assignment

Find each indicated measure in parallelogram *ABCD*.



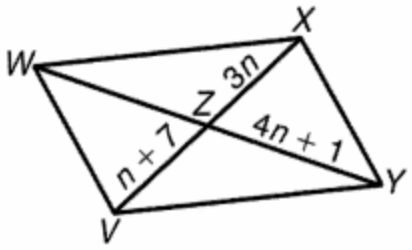
1. $AB =$ 10 cm
2. $BC =$ 14 cm

Find each indicated measure in parallelogram *ABCD*.



3. $m\angle B =$ 70°
4. $m\angle C =$ 110°
5. $m\angle D =$ 70°

***VWXY* is a parallelogram. Find each indicated measure. Show all calculations.**



6. $VX =$ 21
7. $XZ =$ 10.5
8. $ZW =$ 15
9. $WY =$ 30

Suppose that $\overline{AB}$ has endpoints *A*(-3, 6) and *B*(1, -4).

10. Find the length of $\overline{AB}$. 10.78

11. Find the midpoint of $\overline{AB}$. (-1, 1)

12. Find the slope of $\overline{AB}$ -2.5

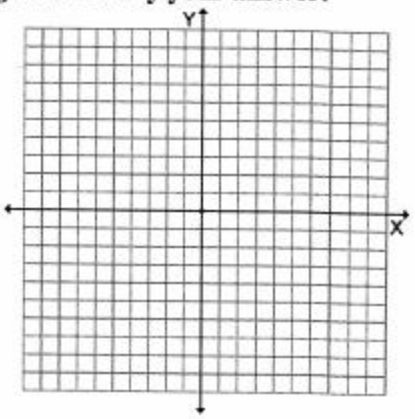
Geometry A
6.2 Proving a Quadrilateral is a Parallelogram

Name _____
Hour _____ **Date** _____

Assignment

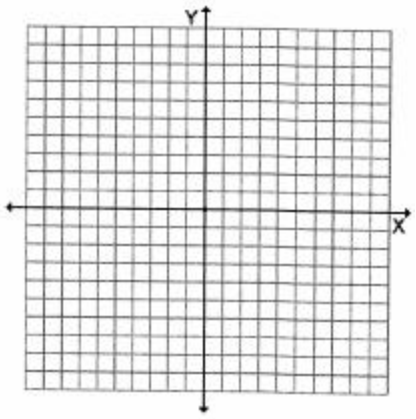
Determine whether a figure with the given vertices is a parallelogram. Justify your answer.

1. $Q(-6, -6)$, $R(2, 2)$, $S(-1, 6)$, $T(-5, 2)$; **Show all calculations.**
Use the **slope formula.**



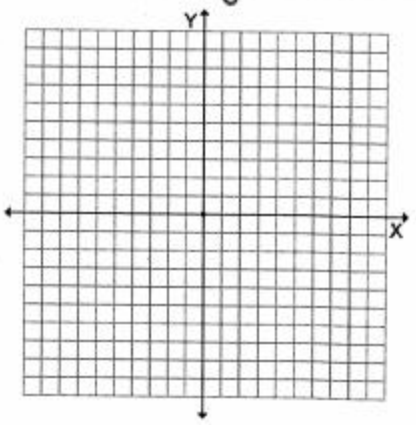
Parallelogram? no Justification opposite sides are not parallel

2. $W(-6, -5)$, $X(-1, -4)$, $Y(0, -1)$, $Z(-5, -2)$; **Show all calculations.**
Use the **distance formula.**



Parallelogram? yes Justification opposite sides are congruent

3. $H(5, 6)$, $J(9, 0)$, $K(8, -5)$, $L(3, 2)$; **Show all calculations.**
Use the **midpoint formula.**



Parallelogram? no Justification diagonals do not bisect

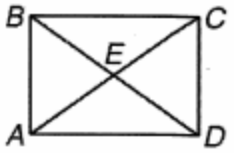
Geometry A
6.3 Properties of Rectangles

Name _____
Hour _____ **Date** _____

Assignment

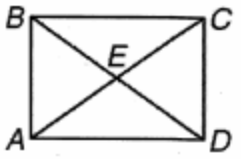
***ABCD* is a rectangle.**

1. If $AC = 2x + 13$ and $DB = 4x - 1$, find x. **Show your calculations.**



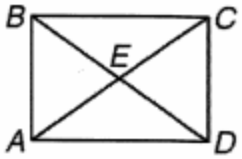
$X = 7$

2. If $AC = x + 3$ and $DB = 3x - 19$, find AC. **Show your calculations.**



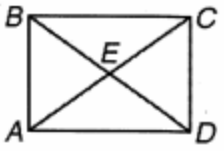
$AC = 14$

3. If $m\angle DAC = 2x + 4$ and $m\angle BAC = 3x + 1$, find x. **Show your calculations.**



$X = 17$

4. If $m\angle BDC = 7x + 1$ and $m\angle ADB = 9x - 7$, find $m\angle CBD$. **Show your calculations.**



$m\angle CBD = 47°$

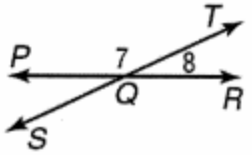
5. Is there enough information to state that the figure below is a parallelogram? yes

Justification diagonals bisect

6. R is between J and K. Find n if $JR = 2n - 12$, $RK = 3n + 10$, and $JK = 33$ cm.

$n = 7$

7. If $m\angle 7 = 5x - 5$ and $m\angle 8 = 4x + 14$, find the value of x.



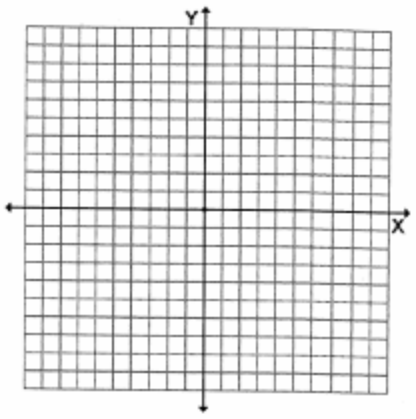
$X = 19$

Geometry A
6.4 Proving a Quadrilateral is a Rectangle

Name _____
Hour _____ **Date** _____

Assignment

1. Determine whether $W(-4, 5)$, $X(6, 0)$, $Y(3, -6)$, and $Z(-7, -1)$ are vertices of a rectangle. **Show all work.** (Hint: use the midpoint formula and distance formula).



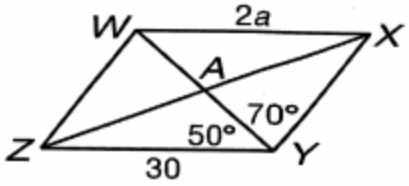
WXYZ is / is not a rectangle.

Justification: diagonals bisect and are congruent.

2. *WXYZ* is a parallelogram. Find each indicated value.

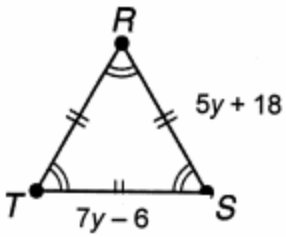
$a =$ 15 $m\angle YWX =$ 50°

$m\angle YWZ =$ 70° $m\angle XYZ =$ 120°



3. Find the perimeter of ΔRST.

P = 234



4. **Given:** $\angle A$ and $\angle B$ are vertical angles.
Conjecture: $\angle A \cong \angle B$
Which of the following would be a counterexample to the conjecture?

D

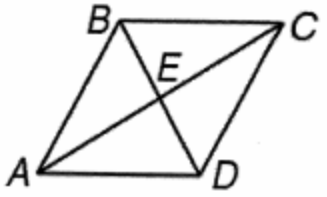
A. $m\angle A = 45$ and $m\angle B = 45$
B. $m\angle A = 100$ and $m\angle B = 80$
C. $m\angle A = 90$ and $m\angle B = 90$
D. None of the above, because the conjecture is true.

Geometry B
6.5 Properties of Rhombi and Squares **Assignment**

Name _____
Hour _____ **Date** _____

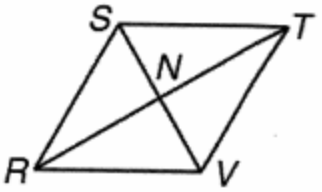
In rhombus *ABCD*, *BE* = 18, and *AE* = 24.

1. $AB =$ 30
2. $BC =$ 30
3. $AD =$ 30
4. $DE =$ 18
5. $CE =$ 24
6. $AC =$ 48
7. $DB =$ 36
8. $m\angle AED =$ 90°



In rhombus *STVR*, $m\angle STN = 25°$.

9. $m\angle VTN =$ 25°
10. $m\angle TVS =$ 65°
11. $m\angle RVS =$ 65°
12. $m\angle SRT =$ 25°
13. $m\angle VRT =$ 25°
14. $m\angle RST =$ 130°
15. $m\angle STV =$ 50°
16. $m\angle RNV =$ 90°



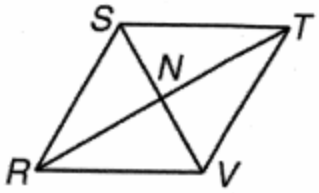
In rhombus *RSTV*, *RS* = 5*y* + 2, *ST* = 3*y* + 6, *NV* = 6, and $m\angle NTV = 30°$.

17. Find the value of *y*. **Show all calculations.**

$y = 2$

18. Find *TV*. **Show all calculations.**

$TV = 12$

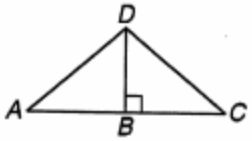


Identify the triangle congruence postulate that could be used to prove that each pair of triangles are congruent based on the given information. If it is not possible to prove that the triangles are congruent, choose "not possible."

19.

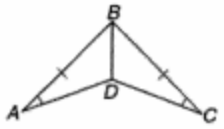
AAS

20.



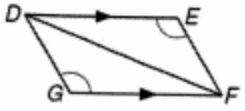
Not possible

21.



Not possible

22.



AAS

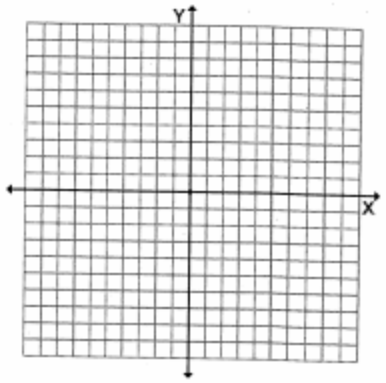
Geometry A
6.6 Proving that a Quadrilateral is a Rhombus or a Square

Name _____
Hour _____ **Date** _____

Assignment

Given each set of vertices, determine whether *QRST* is a parallelogram, rhombus, rectangle, or square. List all that apply. Justify your reasoning. Show all calculations.

1. $Q(-4, 5)$, $R(4, 1)$, $S(1, -5)$, $T(-7, -1)$



QRST is a (circle all that apply)

Parallelogram *Rectangle* ~~*Rhombus*~~ ~~*Square*~~

2. Which one of the following pairs of slopes are slopes corresponding to parallel lines? B

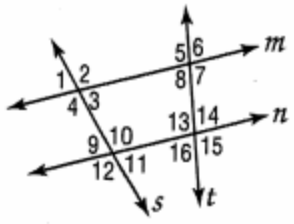
A. $\frac{5}{3}$ and $\frac{6}{10}$ **B.** $\frac{5}{3}$ and $\frac{20}{12}$ **C.** $-\frac{10}{6}$ and $\frac{5}{3}$ **D.** $\frac{5}{3}$ and $-\frac{9}{15}$

3. Which one of the following pairs of slopes are slopes corresponding to perpendicular lines? D

A. $\frac{5}{3}$ and $\frac{6}{10}$ **B.** $\frac{5}{3}$ and $\frac{20}{12}$ **C.** $-\frac{10}{6}$ and $\frac{5}{3}$ **D.** $\frac{5}{3}$ and $-\frac{9}{15}$

4. Which angle pair are $\angle 11$ and $\angle 16$ in the figure at the right? E

A. Vertical Angles (VA)
B. Corresponding Angles (CA)
C. Alternate Interior Angles (AIA)
D. Alternate Exterior Angles (AEA)
E. Consecutive Interior Angles (CIA)

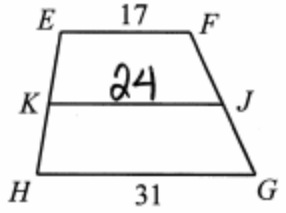


Geometry A
6.7 Trapezoids

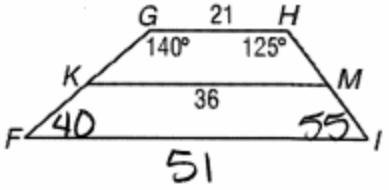
Name _____
Hour _____ **Date** _____

Assignment

1. For trapezoid *EFGH*, *J* and *K* are the midpoints of the legs. Find *JK*. **Show all calculations.**



2. For trapezoid *FGHI*, *K* and *M* are the midpoints of the legs. Find *FI*, $\angle F$ and $\angle I$. **Show all calculations.**

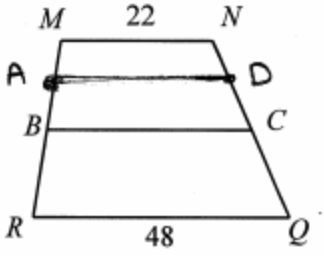


3. In trapezoid *MNQR*, *B* and *C* are midpoints of the legs. Let $\overline{AD}$ be the median of *MNCB*.

a. Draw and label $\overline{AD}$ on the figure.

b. Find *AD*.
Show all calculations.

AD = 28.5

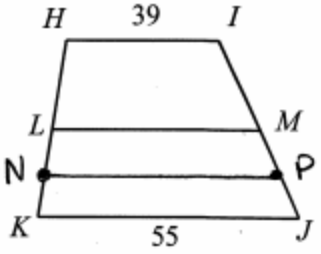


4. In trapezoid *HIJK*, *L* and *M* are midpoints of the legs. Let $\overline{NP}$ be the median of *LMJK*.

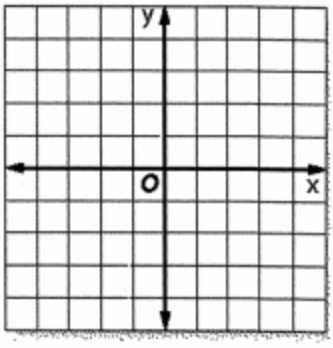
a. Draw and label $\overline{NP}$ on the figure.

b. Find *NP*.
Show all calculations.

NP = 51



5. Verify that *A*(-3, -2), *B*(4, -2), *C*(-1, 5), and *D*(2, 5), are vertices of a trapezoid. Justify your answer.



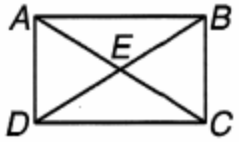
ABCD is a trapezoid.

Justification: exactly one pair of parallel sides

6. $CDEF$ is a parallelogram. $m\angle D = 47^\circ$. Find the indicated values.

$m\angle C =$ 133 $m\angle E =$ 133 $m\angle F =$ 47

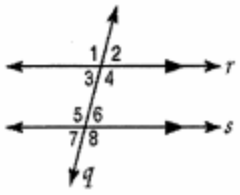
7. $ABCD$ is a rectangle. If $m\angle DAC = 7x + 1$ and $m\angle BAC = 9x - 7$, find $m\angle DCA$. **Show all calculations.**



$m\angle DCA = 47^\circ$

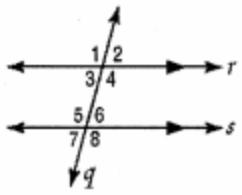
In problems #8 and 9, $r \parallel s$. Solve for x, then find the measures of the indicated angles.

8. $m\angle 4 = x + 35$, $m\angle 6 = 4x + 10$



$x =$ 27, $m\angle 4 =$ 62, $m\angle 2 =$ 118

9. $m\angle 5 = 6x + 12$, $m\angle 4 = 7x - 9$



$x =$ 21, $m\angle 4 =$ 138, $m\angle 6 =$ 42

State the property, definition, theorem, or postulate that justifies each statement.

10. $CD = CD$. reflexive

11. If $\overline{AB} \cong \overline{BC}$ and $\overline{BC} \cong \overline{CE}$, then $\overline{AB} \cong \overline{CE}$. Transitive

12. If N is between M and P, then $MN + NP = MP$. SAP (Segment Addition Postulate)

13. If $\overline{MN} \cong \overline{PQ}$, then $\overline{PQ} \cong \overline{MN}$. Symmetric

14. If $m\angle 7 + m\angle 8 = 85^\circ$ and $m\angle 8 = 41^\circ$, then $m\angle 7 + 41^\circ = 85^\circ$. Substitution

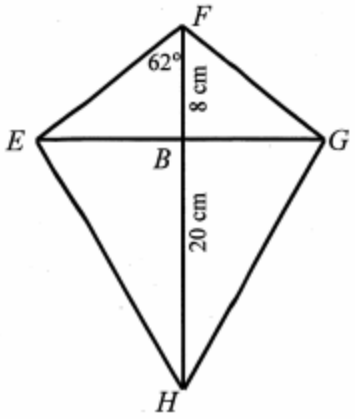
15. If R is the midpoint of $\overline{QT}$, then $\overline{QR} \cong \overline{RT}$. Midpoint Thrm.

Geometry A
6.8 Kites & Quadrilaterals

Name _____
Hour _____ **Date** _____

Assignment

1. *EFGH* is a kite with ends *F* and *H*. If *EG* = 30 cm, find the indicated lengths and angle measures.



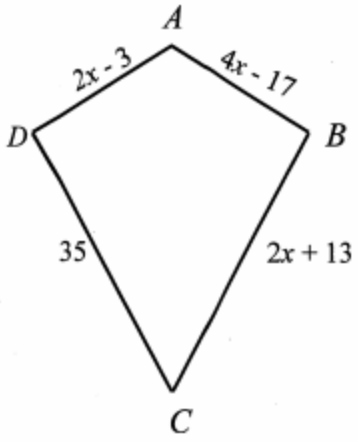
EB = 15 *BG* = 15

EF = 17 *FG* = 17

EH = 25 *GH* = 25

$m\angle GBH$ = 90 $m\angle BEF$ = 28

2. Given ABCD is a kite with ends *A* and *C*, solve for *x* and find all missing side lengths.



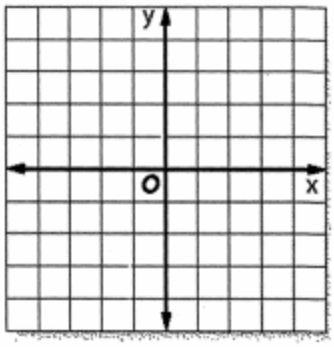
X = 7

DA = 11

BA = 11

BC = 27

3. Verify that *A*(1, -3), *B*(4, -2), *C*(3, 1), and *D*(-2, 1), are vertices of a kite. Justify your answer.



ABCD is a kite.

Justification: diagonals are perpendicular

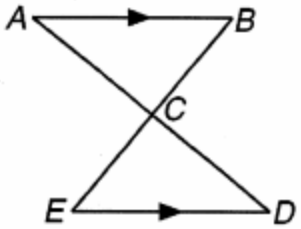
For # 4-11, fill in the blanks.

4. The diagonals of a parallelogram bisect one another.
5. Opposite angles of a parallelogram are congruent.
6. Opposite sides of parallelograms are parallel and congruent.
7. Consecutive angles of parallelograms are supplementary
8. The diagonals of a rectangle are congruent.
9. All angles of a rectangle are 90°.
10. The diagonals of a rhombus are perpendicular and bisect each other.
11. All sides of a rhombus are congruent.

12. Complete the following proof:

Given: C is the midpoint of $\overline{AD}$
C is the midpoint of $\overline{BE}$

Prove: $\Delta ABC \cong \Delta DEC$



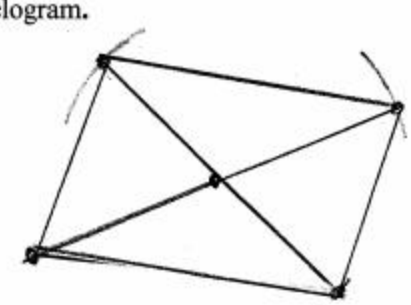
Statements	Reasons
1. C is the midpoint of $\overline{AD}$	1. Given
2. $\overline{AC} \cong \overline{DC}$	2. Midpoint Theorem
3. C is the midpoint of $\overline{BE}$	3. Given
4. $\overline{BC} \cong \overline{EC}$	4. Midpoint Theorem
5. $\angle ACB \cong \angle DCE$	5. Vertical Angles Theorem
6. $\Delta ABC \cong \Delta DEC$	6. SAS

Geometry A
6.9 Constructions of Quadrilaterals

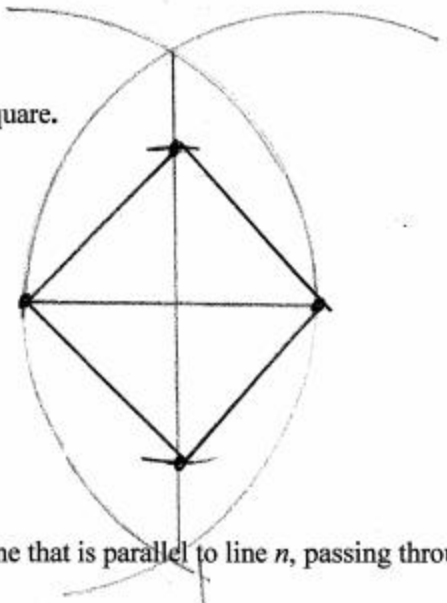
Name _____
Hour _____ **Date** _____

Assignment

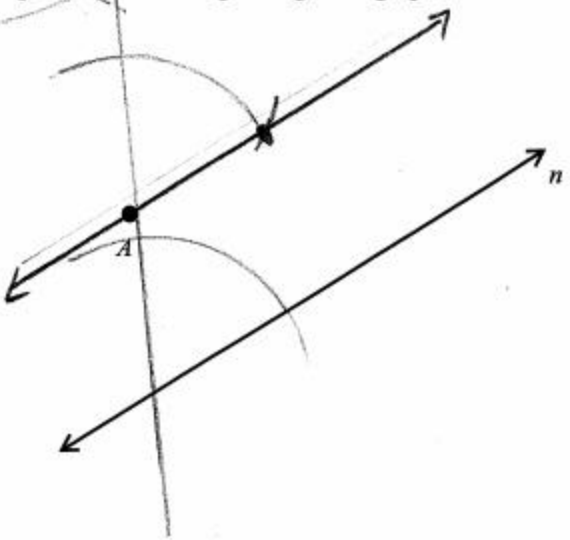
1. Construct a parallelogram.



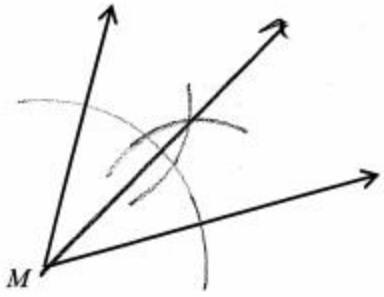
2. Construct a square.



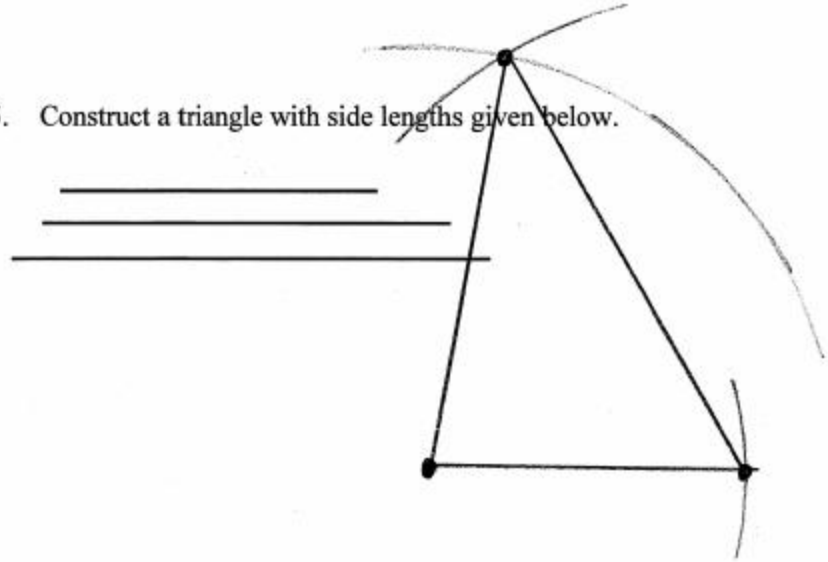
3. Construct a line that is parallel to line n, passing through point A.



4. Construct the bisector of $\angle M$.

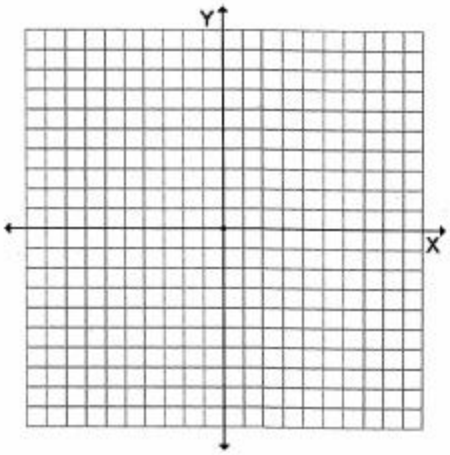


5. Construct a triangle with side lengths given below.



6. Determine whether the quadrilateral with the given vertices is a parallelogram, rectangle, rhombus, or square. Circle all that apply. Show all calculations.

$B(0, 3)$, $E(6, -2)$, $F(1, -8)$, $G(-5, -3)$



BEFG is a (circle all that apply)

Parallelogram *Rectangle* *Rhombus* *Square*