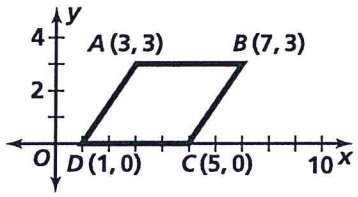
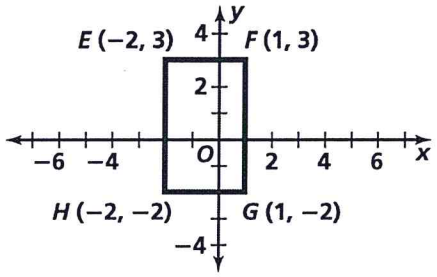
Name _____ Class _____ Date _____

Practice 6-1

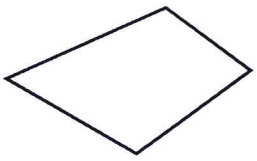
Classifying Quadrilaterals

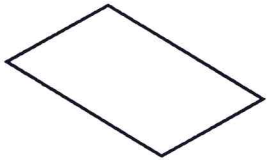
Determine the most precise name for each quadrilateral.

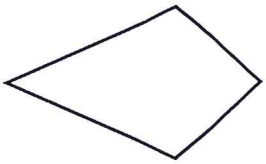
1. 

2. 

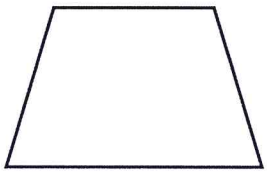
Judging by appearance, classify each quadrilateral in as many ways as possible.

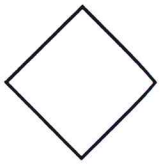
3. 

4. 

5. 

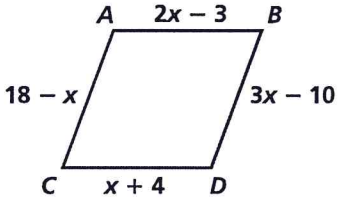
6. 

7. 

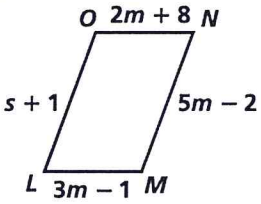
8. 

Algebra **Find the values of the variables. Then find the lengths of the sides of each quadrilateral.**

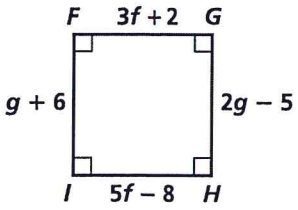
9. rhombus *ABDC*



10. parallelogram *LONM*



11. square *FGHI*



Determine the most precise name for each quadrilateral with the given vertices.

12. $A(1, 4), B(3, 5), C(6, 1), D(4, 0)$

13. $W(0, 5), X(3, 5), Y(3, 1), Z(0, 1)$

14. $A(-2, 4), B(2, 6), C(6, 4), D(2, -3)$

15. $P(-1, 0), Q(-1, 3), R(2, 4), S(2, 1)$

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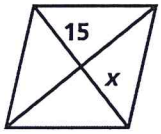
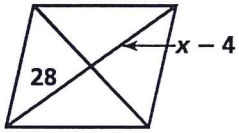
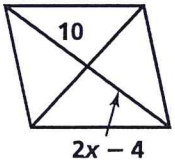
Practice 6-2

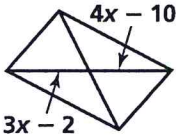
Properties of Parallelograms

Find the value of x in each parallelogram.

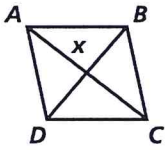
1. 

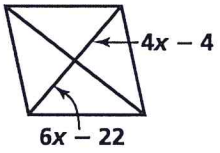
2. 

3. 

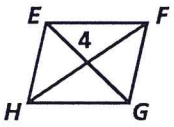
4. 

5. $AC = 24$

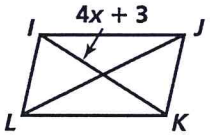


6. 

7. $x = EG$

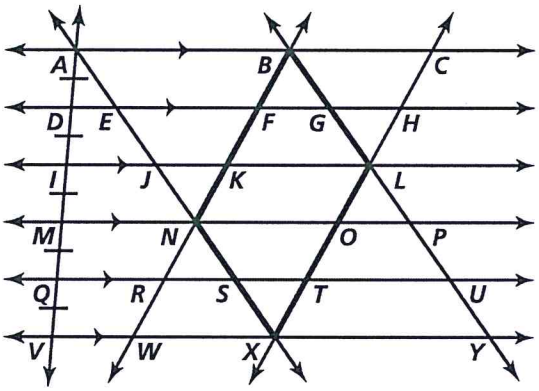


8. $JK = 35$

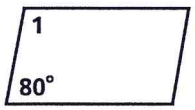


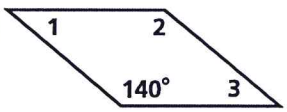
If $AE = 17$ and $BF = 18$, find the measures of the sides of parallelogram $BNXL$.

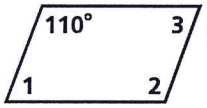
9. BN
10. NX
11. XL
12. BL

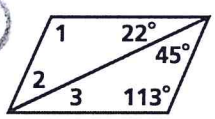


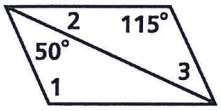
Find the measures of the numbered angles for each parallelogram.

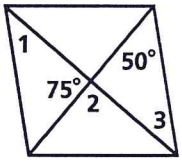
13. 

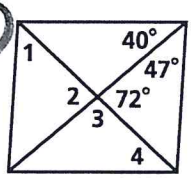
14. 

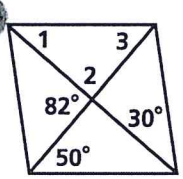
15. 

16. 

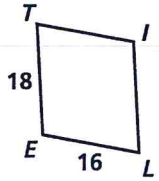
17. 

18. 

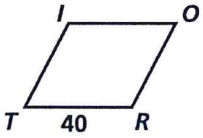
19. 

20. 

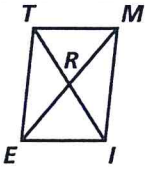
Find the length of $\overline{TI}$ in each parallelogram.

21. 

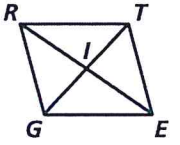
22. $OR = \frac{7}{8}IO$



23. $TR = 14, ME = 31$



24. $IE = 6, GT = 8$



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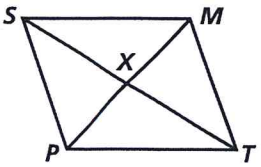
Practice 6-3

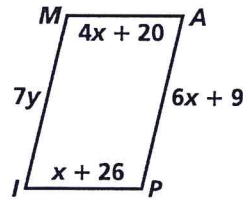
Proving That a Quadrilateral Is a Parallelogram

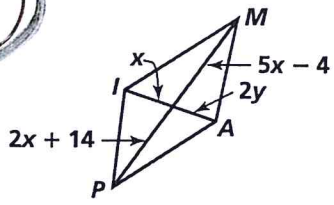
State whether the information given about quadrilateral *SMTP* is sufficient to prove that it is a parallelogram.

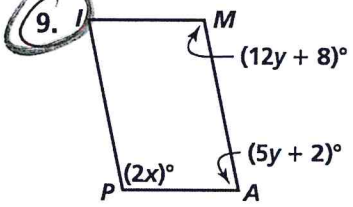


1. $\angle SPT \cong \angle SMT$
2. $\angle SPX \cong \angle TMX, \angle TPX \cong \angle SMX$
3. $\overline{SM} \cong \overline{PT}, \overline{SP} \cong \overline{MT}$
4. $\overline{SX} \cong \overline{XT}, \overline{SM} \cong \overline{PT}$
5. $\overline{PX} \cong \overline{MX}, \overline{SX} \cong \overline{TX}$
6. $\overline{SP} \cong \overline{MT}, \overline{SP} \parallel \overline{MT}$

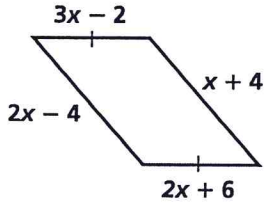
Algebra **Find the values of x and y for which the figure must be a parallelogram.**

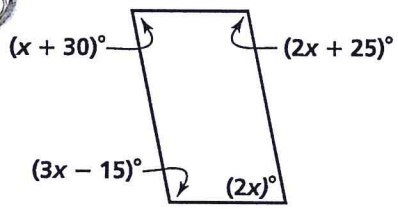
7. 

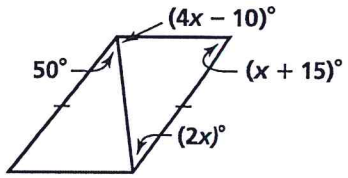
8. 

9. 

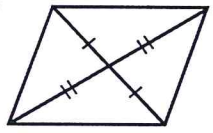
Algebra **Find the value of x. Then tell whether the figure must be a parallelogram. Explain your answer.**

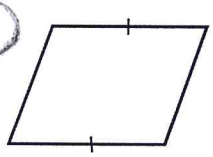
10. 

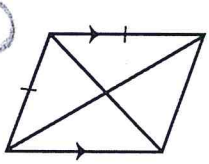
11. 

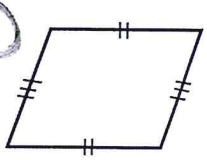
12. 

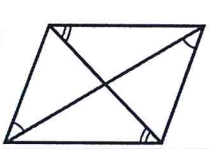
Decide whether the quadrilateral is a parallelogram. Explain your answer.

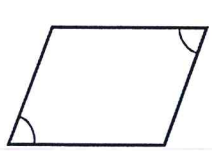
13. 

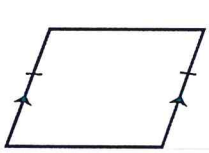
14. 

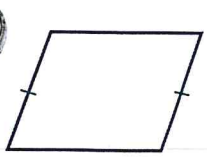
15. 

16. 

17. 

18. 

19. 

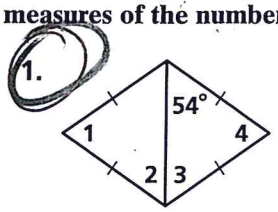
20. 

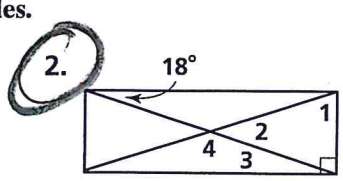
Name _____ Class _____ Date _____

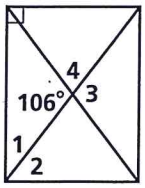
Practice 6-4

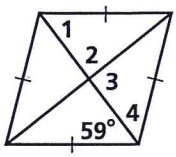
Special Parallelograms

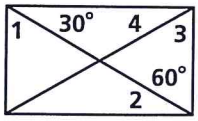
For each parallelogram, (a) choose the best name, and then (b) find the measures of the numbered angles.

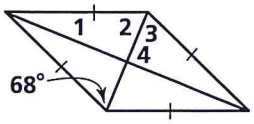
1. 

2. 

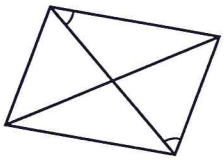
3. 

4. 

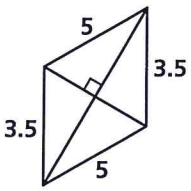
5. 

6. 

The parallelograms below are not drawn to scale. Can the parallelogram have the conditions marked? If not, write *impossible.* Explain your answer.

7. 

8. 

9. 

***HIJK* is a rectangle. Find the value of x and the length of each diagonal.**

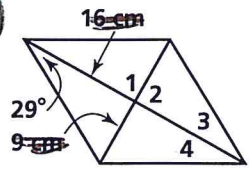
10. $HJ = x$ and $IK = 2x - 7$

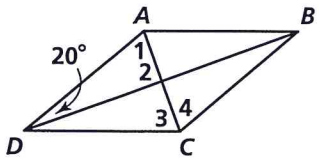
11. $HJ = 3x + 5$ and $IK = 5x - 9$

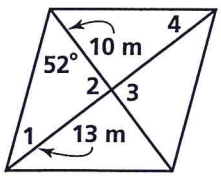
12. $HJ = 3x + 7$ and $IK = 6x - 11$

13. $HJ = 19 + 2x$ and $IK = 3x + 22$

For each rhombus, (a) find the measures of the numbered angles, and ~~then~~ (b) ~~find the area.~~

14. 

15. $AC = 8$ in.
$BD = 22$ in.


16. 

Determine whether the quadrilateral can be a parallelogram. If not, write *impossible.* Explain your answer.

17. One pair of opposite sides is parallel, and the other pair is congruent.

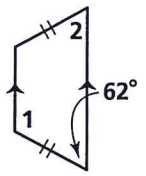
18. Opposite angles are congruent and supplementary, but the quadrilateral is not a rectangle.

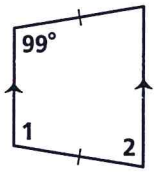
Name _____ Class _____ Date _____

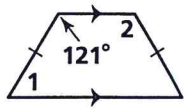
Practice 6-5

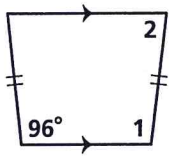
Trapezoids and Kites

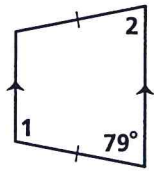
Find the measures of the numbered angles in each isosceles trapezoid.

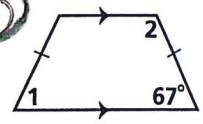
1. 

2. 

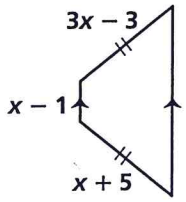
3. 

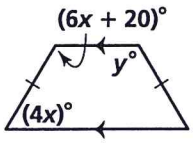
4. 

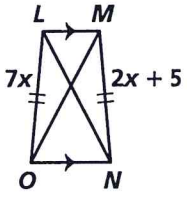
5. 

6. 

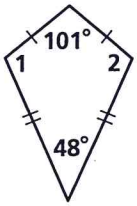
Algebra **Find the value(s) of the variable(s) in each isosceles trapezoid.**

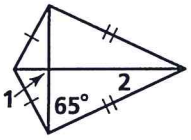
7. 

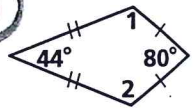
8. 

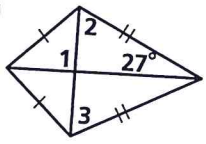
9. 

Find the measures of the numbered angles in each kite.

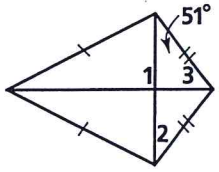
10. 

11. 

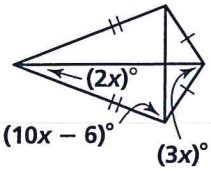
12. 

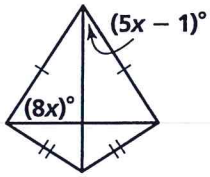
13. 

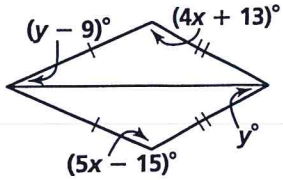
14. 

15. 

Algebra **Find the value(s) of the variable(s) in each kite.**

16. 

17. 

18. 

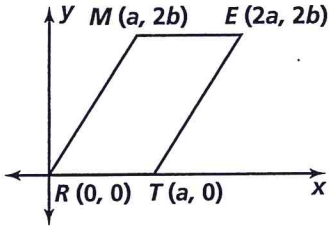
Name _____ Class _____ Date _____

Practice 6-6

Placing Figures in the Coordinate Plane

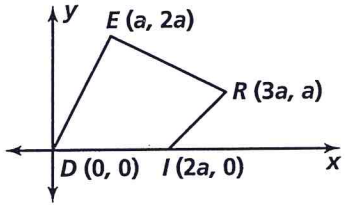
Find the coordinates of the midpoint of each segment and find the length of each segment.

1. $\overline{ME}$
2. $\overline{ET}$
3. $\overline{TR}$
4. $\overline{RM}$

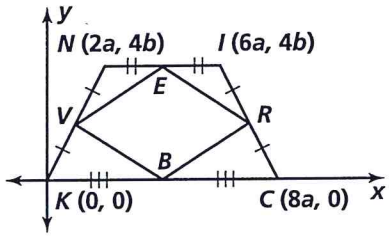


Find the slope of each segment.

5. $\overline{DI}$
6. $\overline{IR}$
7. $\overline{RE}$
8. $\overline{DE}$

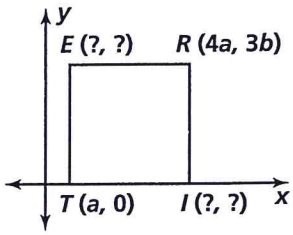


9. $\overline{VE}$
10. $\overline{ER}$
11. $\overline{RB}$
12. $\overline{VB}$

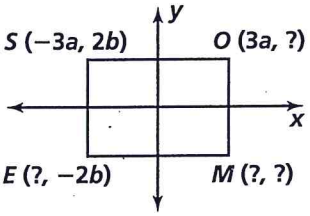


Use the properties of each figure to find the missing coordinates.

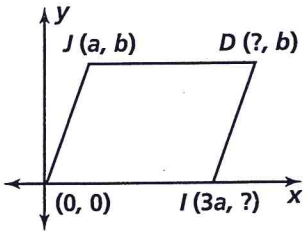
13. square



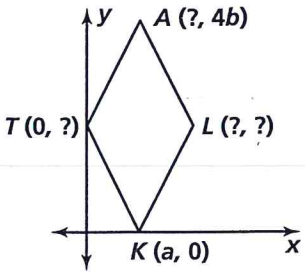
14. rectangle



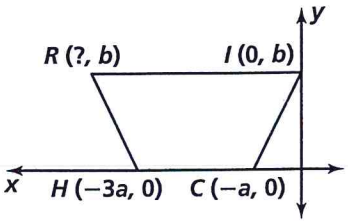
15. parallelogram



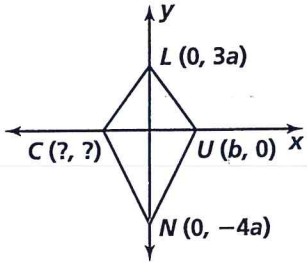
16. rhombus



17. isosceles trapezoid



18. kite

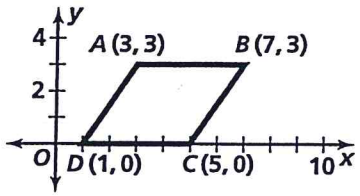


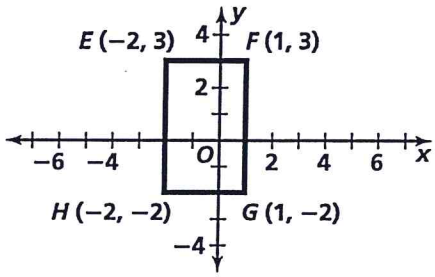
Name ANSWERS Class Date

Practice 6-1

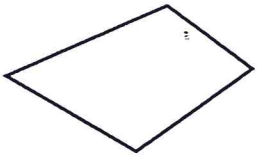
Classifying Quadrilaterals

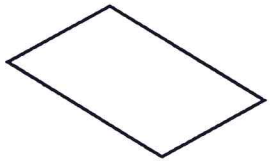
Determine the most precise name for each quadrilateral.

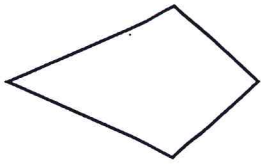
1. 

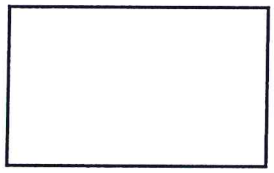
2. 

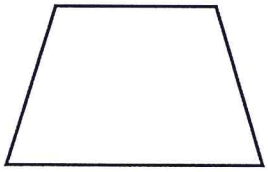
Judging by appearance, classify each quadrilateral in as many ways as possible.

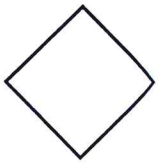
3. 

4. 

5. 

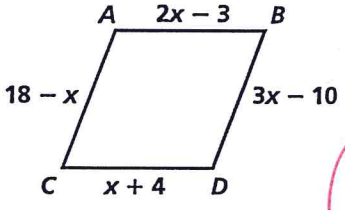
6. 

7. 

8. 

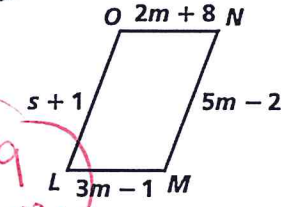
Algebra **Find the values of the variables. Then find the lengths of the sides of each quadrilateral.**

9. rhombus *ABDC*



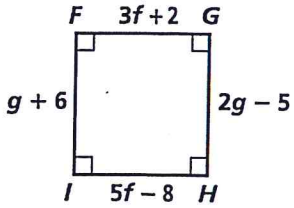
X=7

10. parallelogram *LONM*



m=9
s=42

11. square *FGHI*



Determine the most precise name for each quadrilateral with the given vertices.

12. $A(1, 4), B(3, 5), C(6, 1), D(4, 0)$ ||-gram

13. $W(0, 5), X(3, 5), Y(3, 1), Z(0, 1)$

14. $A(-2, 4), B(2, 6), C(6, 4), D(2, -3)$ Kite

15. $P(-1, 0), Q(-1, 3), R(2, 4), S(2, 1)$

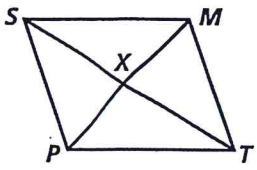
Name _____ Class _____ Date _____

Practice 6-3

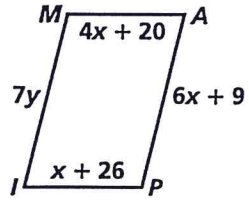
Proving That a Quadrilateral Is a Parallelogram

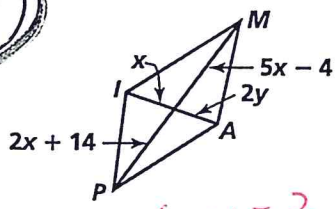
State whether the information given about quadrilateral *SMTP* is sufficient to prove that it is a parallelogram.

1. $\angle SPT \cong \angle SMT$ NO
2. $\angle SPX \cong \angle TMX, \angle TPX \cong \angle SMX$ Yes
3. $\overline{SM} \cong \overline{PT}, \overline{SP} \cong \overline{MT}$ Yes
4. $\overline{SX} \cong \overline{XT}, \overline{SM} \cong \overline{PT}$ NO
5. $\overline{PX} \cong \overline{MX}, \overline{SX} \cong \overline{TX}$ Yes
6. $\overline{SP} \cong \overline{MT}, \overline{SP} \parallel \overline{MT}$ Yes

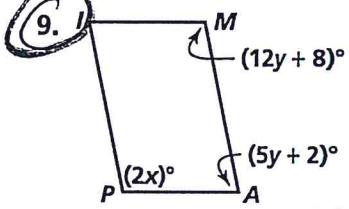


Algebra **Find the values of x and y for which the figure must be a parallelogram.**

7. 

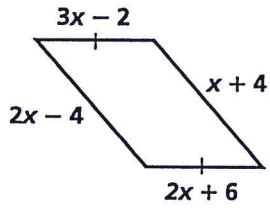
8. 

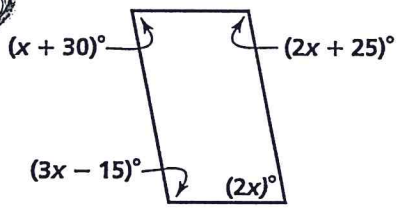
X=6 Y=3

9. 

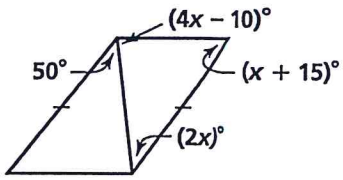
X=64
y = 10

Algebra **Find the value of x. Then tell whether the figure must be a parallelogram. Explain your answer.**

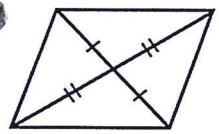
10. 

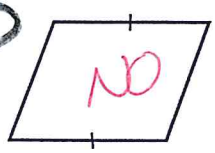
11. 

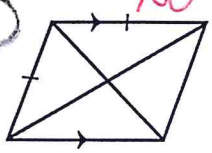
X=40 NOT a ll-gram

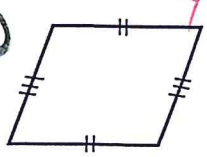
12. 

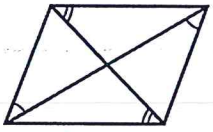
Decide whether the quadrilateral is a parallelogram. Explain your answer.

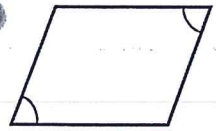
13. 
Y

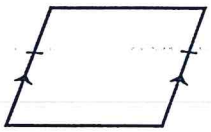
14. 
NO

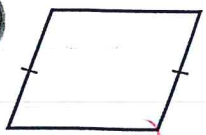
15. 
NO

16. 
Yes

17. 
Yes

18. 
NO

19. 
Yes

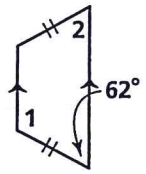
20. 
NO

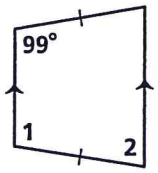
Name _____ Class _____ Date _____

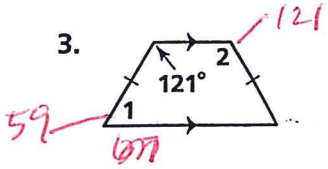
Practice 6-5

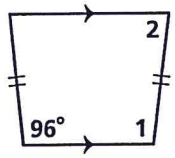
Trapezoids and Kites

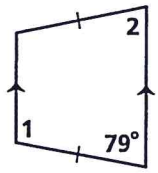
Find the measures of the numbered angles in each isosceles trapezoid.

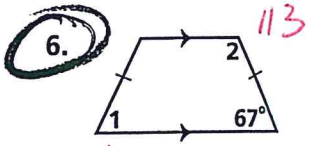
1. 

2. 

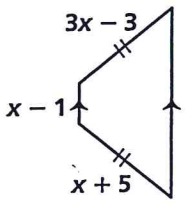
3. 

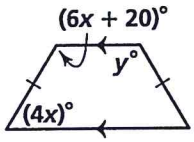
4. 

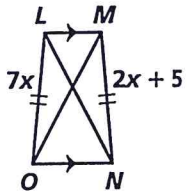
5. 

6. 

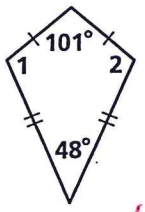
Algebra **Find the value(s) of the variable(s) in each isosceles trapezoid.**

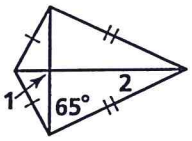
7. 

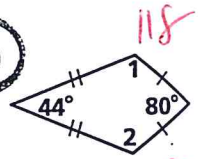
8. 

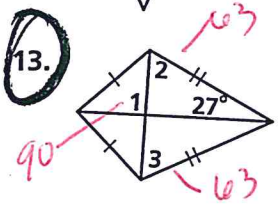
9. 

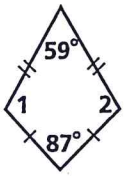
Find the measures of the numbered angles in each kite.

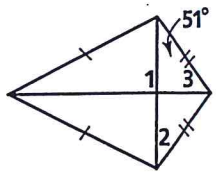
10. 

11. 

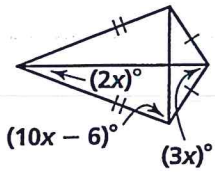
12. 

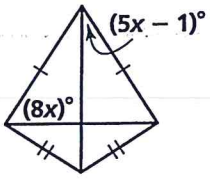
13. 

14. 

15. 

Algebra **Find the value(s) of the variable(s) in each kite.**

16. 

17. 

18.