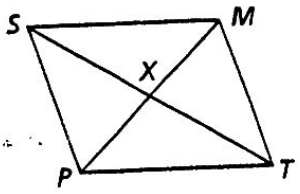
Name _____ Class _____ Date _____

Practice 6-3

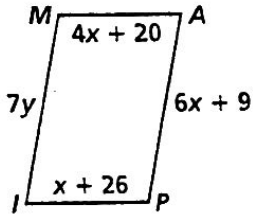
Proving That a Quadrilateral Is a Parallelogram

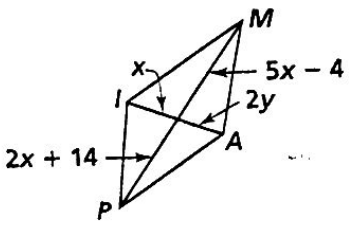
State whether the information given about quadrilateral *SMTP* is sufficient to prove that it is a parallelogram.

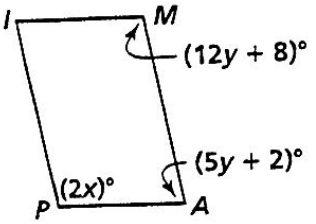


1. $\angle SPT \cong \angle SMT$
2. $\angle SPX \cong \angle TMX, \angle TPX \cong \angle SMX$
3. $\overline{SM} \cong \overline{PT}, \overline{SP} \cong \overline{MT}$
4. $\overline{SX} \cong \overline{XT}, \overline{SM} \cong \overline{PT}$
5. $\overline{PX} \cong \overline{MX}, \overline{SX} \cong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

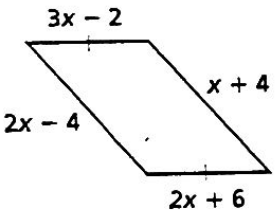
Algebra **Find the values of x and y for which the figure must be a parallelogram.**

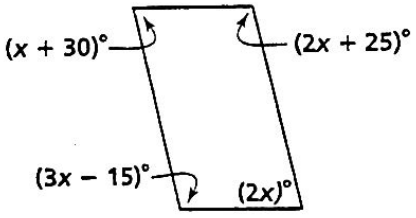
7. 

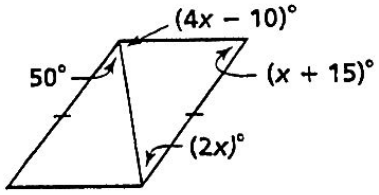
8. 

9. 

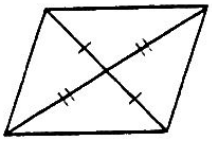
Algebra **Find the value of x. Then tell whether the figure must be a parallelogram. Explain your answer.**

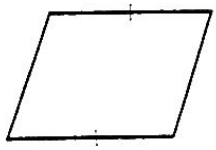
10. 

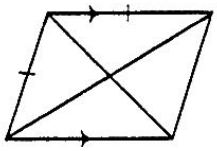
11. 

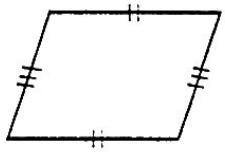
12. 

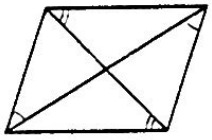
Decide whether the quadrilateral is a parallelogram. Explain your answer.

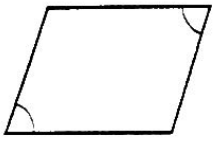
13. 

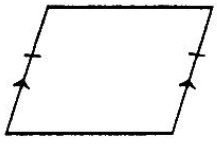
14. 

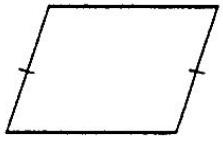
15. 

16. 

17. 

18. 

19. 

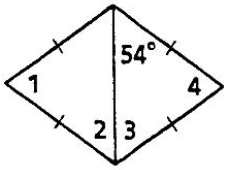
20. 

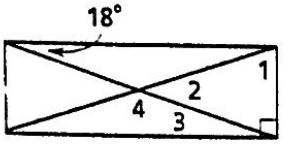
Name _____ Class _____ Date _____

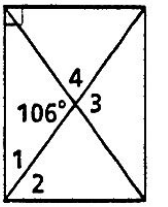
Practice 6-4

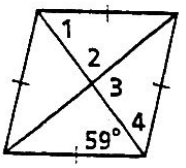
Special Parallelograms

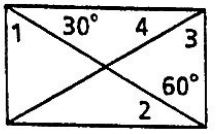
For each parallelogram, (a) choose the best name, and then (b) find the measures of the numbered angles.

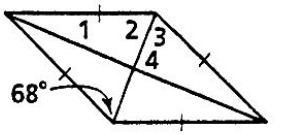
1. 

2. 

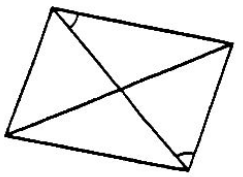
3. 

4. 

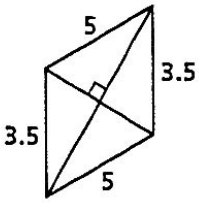
5. 

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.**

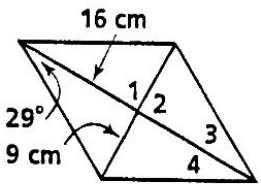
10. $HJ = x$ and $IK = 2x - 7$

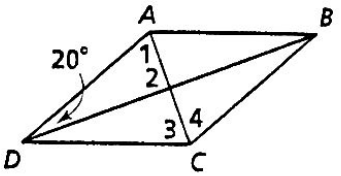
11. $HJ = 3x + 5$ and $IK = 5x - 9$

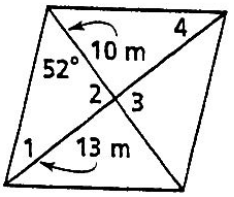
12. $HJ = 3x + 7$ and $IK = 6x - 11$

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.