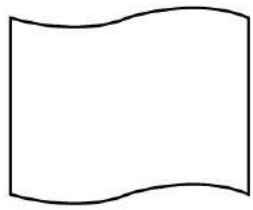
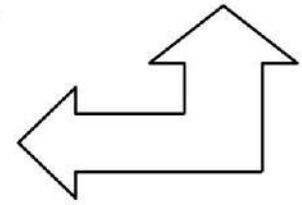
LESSON

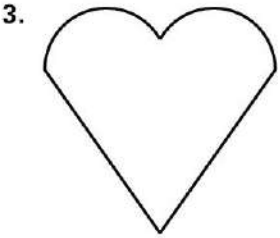
6.1

NAME _____

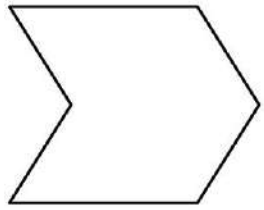
Decide whether the figure is a polygon.

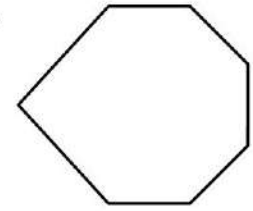
1. 

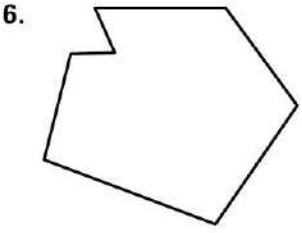
2. 

3. 

Use the number of sides to tell what kind of polygon the shape is. Then state whether the polygon is *convex* or *concave*.

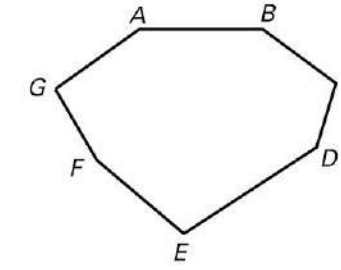
4. 

5. 

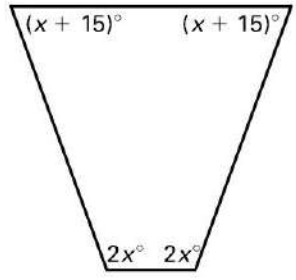
6. 

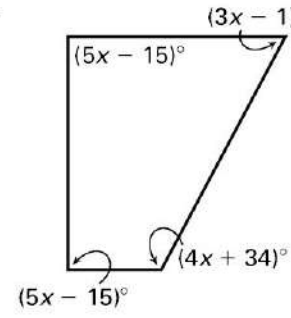
Use the diagram at the right to answer the following.

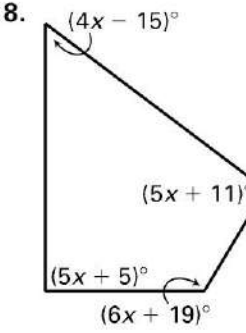
7. Name the polygon by the number of sides it has.
8. Polygon *ABCDEFG* is one name for the polygon. State one other name.
9. Name all of the diagonals that have vertex E as an endpoint.
10. Name the nonconsecutive angles to $\angle A$.



Use the information in the diagram to solve for *x*.

16. 

17. 

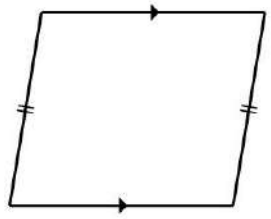
18. 

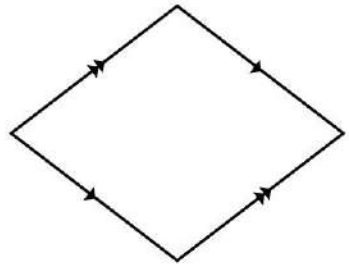
LESSON

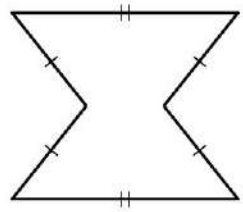
6.2

NAME _____

Decide whether the figure is a parallelogram. If it is not, explain why not.

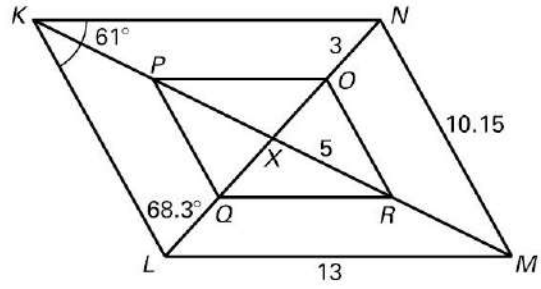
1. 

2. 

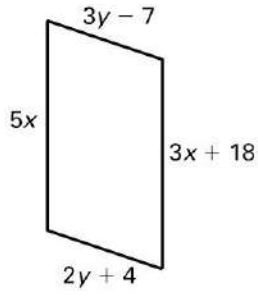
3. 

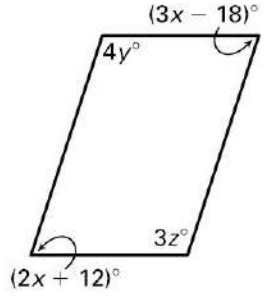
Use the diagram of parallelogram *KLMN* at the right. Points *O, P, Q, R* are midpoints of $\overline{XN}$, $\overline{XK}$, $\overline{XL}$, and $\overline{XM}$. Find the indicated measures.

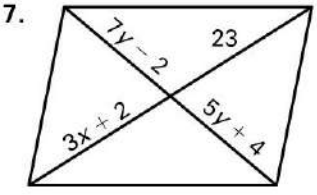
4. KN
5. KL
6. XN
7. LN
8. KP
9. KR
10. $m\angle MNL$
11. $m\angle NLM$
12. $m\angle NML$
13. $m\angle XQP$
14. Perimeter of parallelogram $KLMN$



Find the value of each variable in the parallelogram.

15. 

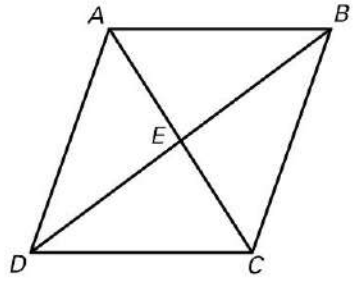
16. 

17. 

Write a two-column proof.

18. **Given:** $\square ABCD$

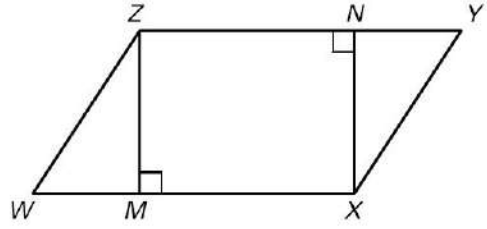
    Prove: $\triangle AED \cong \triangle CEB$



19. **Given:** $\square WXYZ$

    $\overline{ZM} \perp \overline{WX}, \overline{XN} \perp \overline{ZY}$

    Prove: $\triangle ZMW \cong \triangle XNY$

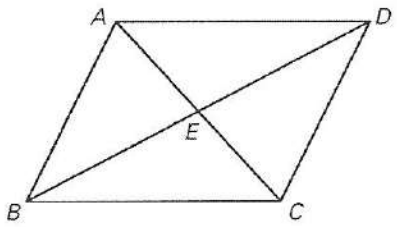


LESSON 6.3

NAME _____ DATE _____

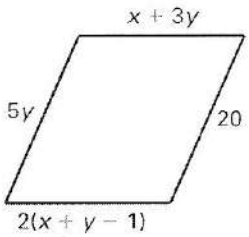
Decide whether each piece of given information alone is sufficient to prove that quadrilateral *ABCD* is a parallelogram.

1. E is the midpoint of $\overline{AC}$ and $\overline{BD}$.
2. $m\angle ABC + m\angle BCD = 180°$
3. $\overline{AB} \parallel \overline{DC}$ and $\overline{BC} \cong \overline{DA}$
4. $\angle ABC \cong \angle ADC$, and $\angle BAD \cong \angle BCD$
5. $\triangle ABE \cong \triangle DCE$
6. $\triangle ABE \cong \triangle CDE$

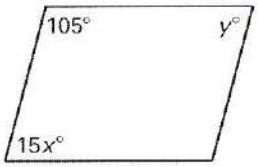


What value of *x* and *y* will make the polygon a parallelogram?

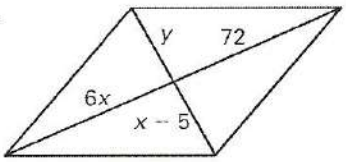
7.



8.



9.



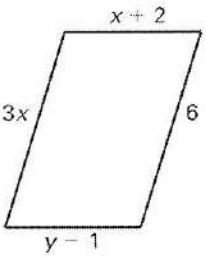
Prove that the points represent the vertices of a parallelogram. Use a different method for each exercise.

10. $A(2, -1)$, $B(1, 3)$, $C(6, 5)$, and $D(7, 1)$

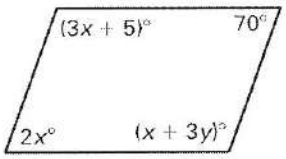
11. $A(-2, -4)$, $B(1, 2)$, $C(2, 10)$, and $D(-1, 4)$

What value of *x* and *y* will make the polygon a parallelogram?

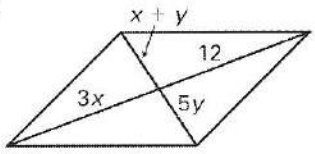
12.



13.



14.



Write a two-column or a paragraph proof

15. **Given:** $\triangle MJK \cong \triangle KLM$

Prove: $MJKL$ is a parallelogram.