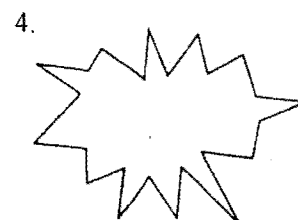
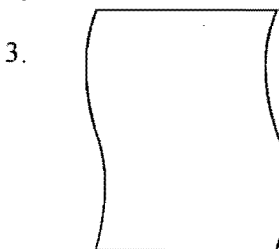
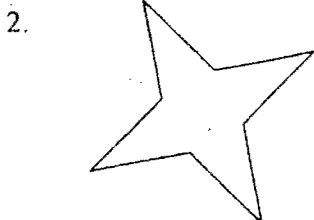
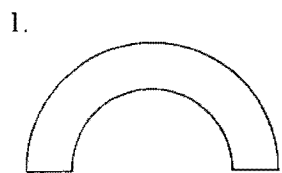
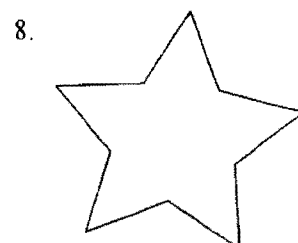
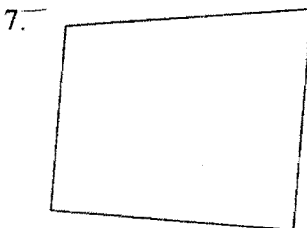
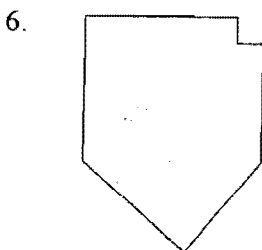
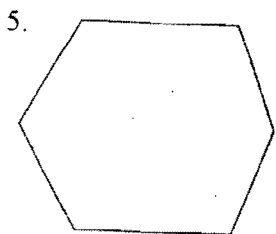


6.1

Tell whether or not each figure is a polygon. (yes or no)

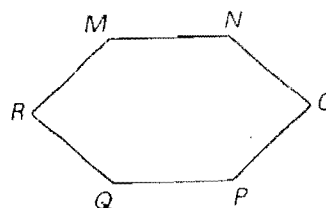


Use the number of sides to name each polygon. Then state whether the polygon is *convex* or *concave*.

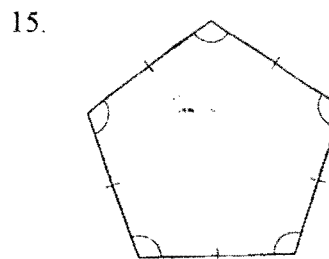
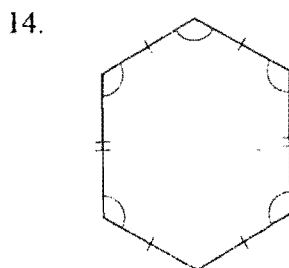
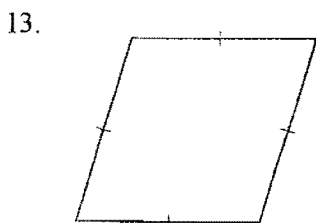


Use the diagram of  $MNOPQR$  to answer the following.

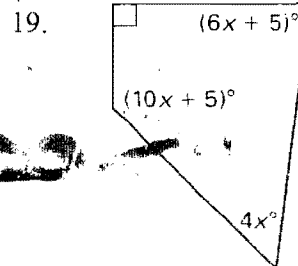
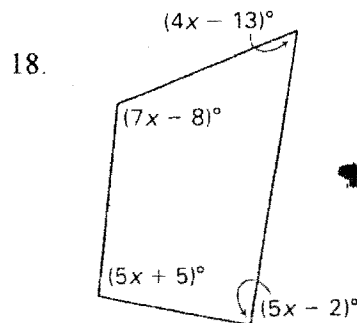
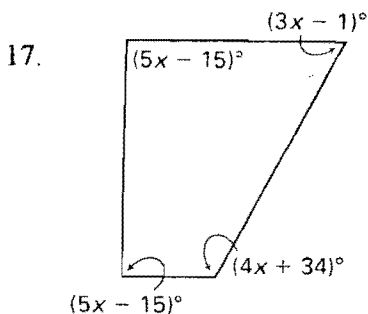
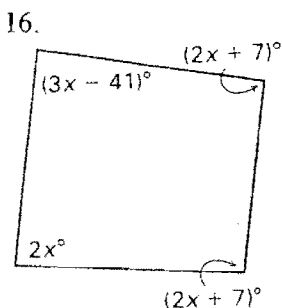
9. Name the polygon by the number of sides it has.
10. State two more possible names for polygon  $MNOPQR$ .
11. Name all of the diagonals that have vertex  $M$  as an endpoint.
12. Name the consecutive angles to  $\angle N$ .



State whether the polygon is best described as *equilateral*, *equiangular*, *regular*, or *none of these*.

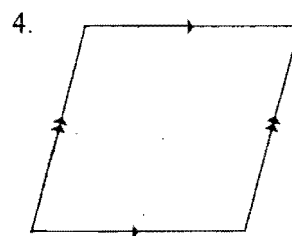
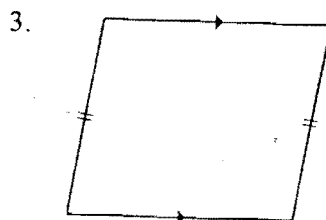
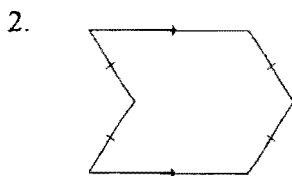
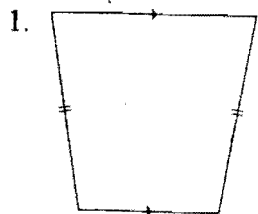


Solve for  $x$ .



## 6.2

Tell whether or not each figure is a parallelogram. (yes or no)



Use the diagram of parallelogram  $KLMN$  to find the indicated measures.

Points  $O, P, Q, R$  are midpoints of  $\overline{KN}$ ,  $\overline{KL}$ ,  $\overline{LM}$ , and  $\overline{MN}$ .

5.  $KN$

11.  $KL$

6.  $XN$

12.  $LN$

7.  $KP$

13.  $KR$

8.  $m\angle MNL$

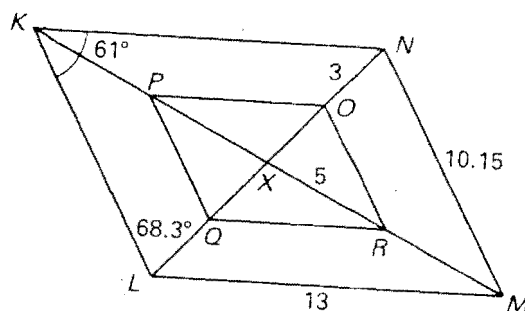
14.  $QR$

9.  $m\angle NML$

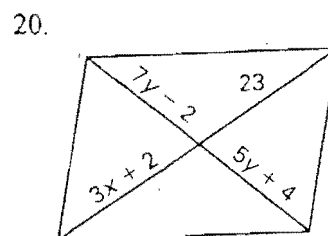
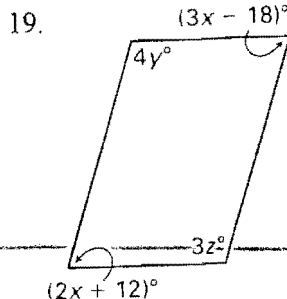
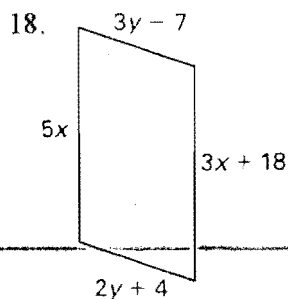
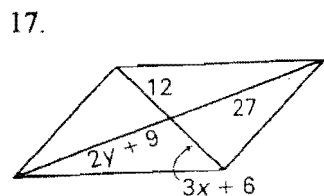
15.  $m\angle XQP$

10.  $m\angle NLM$

16. Perimeter of parallelogram  $KLMN$



Find the value of  $x$  and  $y$ .



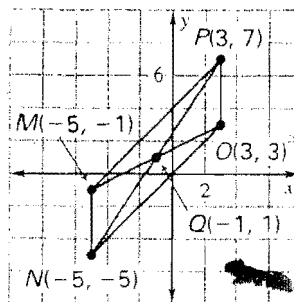
Use the diagram of figure  $MNOP$  to answer the following.

21. Find the length of  $\overline{MP}$ ,  $\overline{NO}$ ,  $\overline{PO}$ , and  $\overline{MN}$ .

22. Find the slope of  $\overline{MP}$ ,  $\overline{NO}$ ,  $\overline{PO}$ , and  $\overline{MN}$ .

23. Find the length of  $\overline{MQ}$ ,  $\overline{QO}$ ,  $\overline{QP}$ , and  $\overline{NQ}$ .  
Do the diagonals bisect each other.

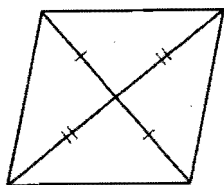
24. Is  $MNOP$  a parallelogram?



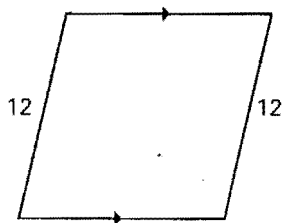
### 6.3

Determine if there is enough information to determine whether each quadrilateral is a parallelogram.

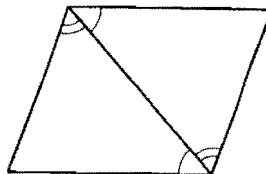
1.



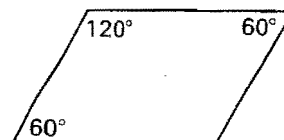
2.



3.



4.



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

5.  $E$  is the midpoint of  $\overline{AC}$  and  $\overline{BD}$ .

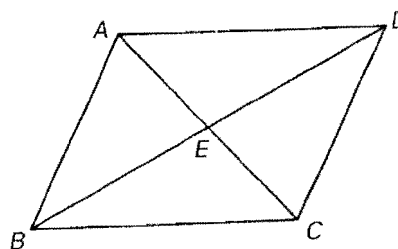
6.  $m\angle ABC + m\angle BCD = 180^\circ$ .

7.  $\overline{AB} \parallel \overline{DC}$  and  $\overline{BC} \cong \overline{DA}$ .

8.  $\angle ABC \cong \angle ADC$  and  $\angle BAD \cong \angle BCD$

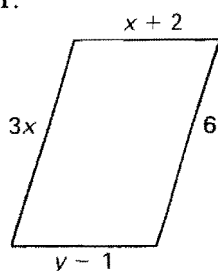
9.  $\triangle ABE \cong \triangle DCE$

10.  $\triangle ABE \cong \triangle CDE$

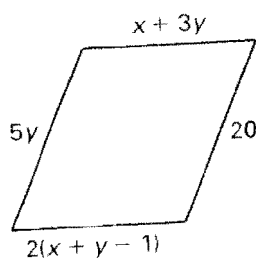


What value of  $x$  and  $y$  will make the polygon a parallelogram?

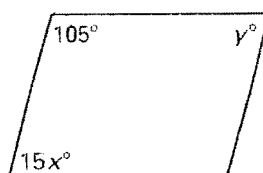
11.



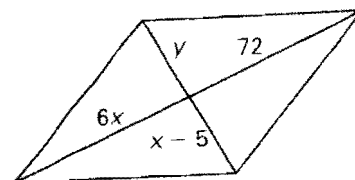
12.



13.



14.



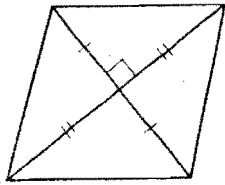
Decide whether the points represent the vertices of a parallelogram  $ABCD$ .

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

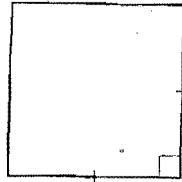
## 6.4

Each figure is a parallelogram. Identify the special type.

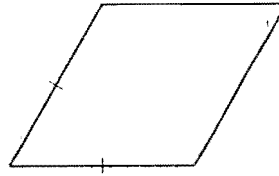
1.



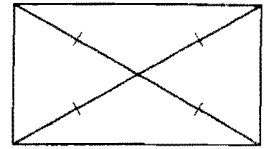
2.



3.

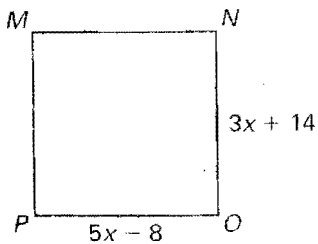


4.

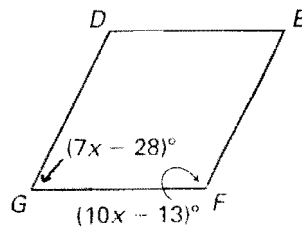


Find the value of  $x$ .

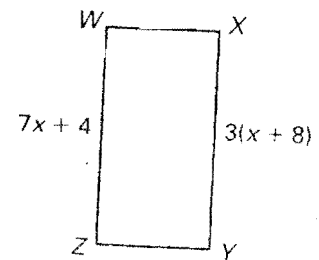
5.  $MNOP$  is a square.



6.  $DEFG$  is a rhombus.



7.  $WXYZ$  is a rectangle.

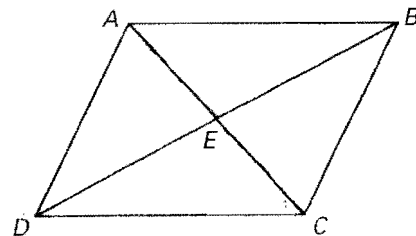


Decide whether the statement is *sometimes*, *always*, or *never* true.

8. A rhombus is equilateral.
9. The diagonals of a rectangle are perpendicular.
10. The opposite angles of a rhombus are supplementary.
11. A square is a rectangle.
12. The diagonals of a rectangle bisect each other.
13. The consecutive angles of a square are supplementary.

Quadrilateral  $ABCD$  is a rhombus.

14. If  $m\angle BAE = 32^\circ$ , find  $m\angle ECD$ .
15. If  $m\angle EDC = 43^\circ$ , find  $m\angle CBA$ .
16. If  $m\angle EAB = 57^\circ$ , find  $m\angle ADC$ .
17. If  $m\angle BEC = (3x - 15)^\circ$ , solve for  $x$ .
18. If  $m\angle ADE = (5x - 8)^\circ$  and  $m\angle CBE = (3x + 24)^\circ$ , solve for  $x$ .
19. If  $m\angle BAD = (4x + 14)^\circ$  and  $m\angle ABC = (2x + 10)^\circ$ , solve for  $x$ .



Name each pair of segments or angles as *bases*, *legs*, *diagonals*, *base angles*, or *opposite angles*.

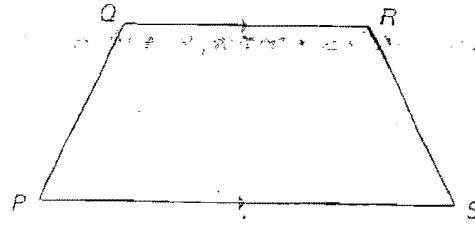
1.  $\overline{QS}$  and  $\overline{PR}$

4.  $\angle Q$  and  $\angle S$

2.  $\overline{PQ}$  and  $\overline{RS}$

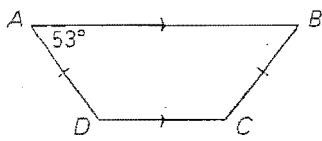
5.  $\angle S$  and  $\angle P$

3.  $\overline{QR}$  and  $\overline{PS}$

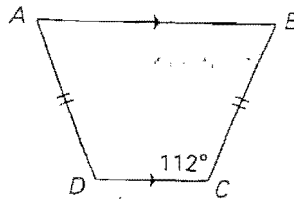


Find the missing angle measures of  $ABCD$ .

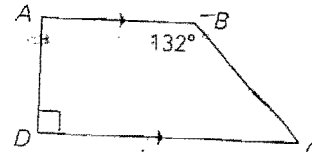
6.



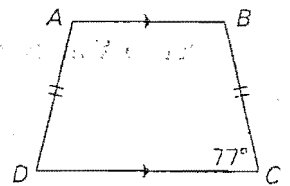
7.



8.

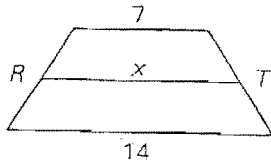


9.

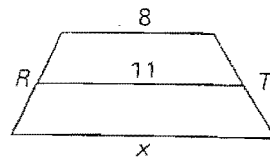


The midsegment of the trapezoid is  $\overline{RT}$ . Find the value of  $x$ .

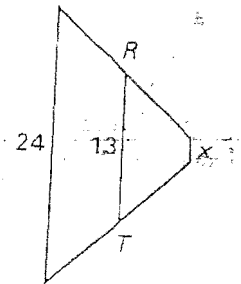
10.



11.

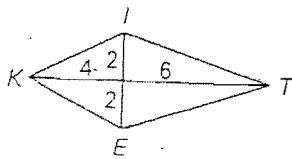


12.

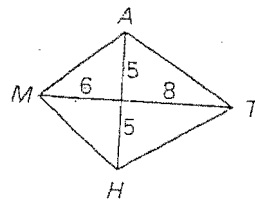


Find the length of the sides for each kite.

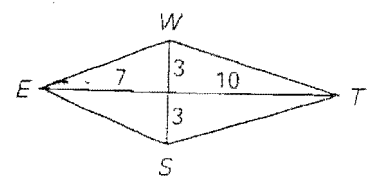
13.



14.

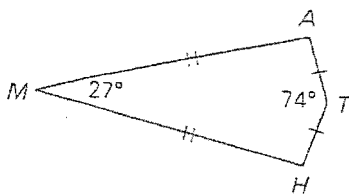


15.

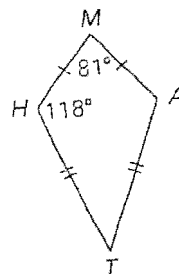


Find the missing angle measures for each kite.

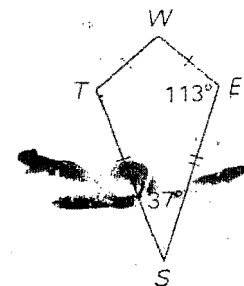
16.



17.



18.



## 6.6

Determine whether  $ABCD$  is a *rectangle*, a *rhombus*, a *square*, a *trapezoid*, or a *kite*.

1.  $A(5, 2)$   $B(1, 9)$   $C(-3, 2)$   $D(1, -5)$
2.  $A(2, 3)$   $B(2, 6)$   $C(-2, 6)$   $D(-2, 3)$
3.  $A(-5, -2)$   $B(1, -2)$   $C(3, 0)$   $D(1, 4)$

Put an  $X$  in the box if the shape *always* has the given property.

Property	<input type="checkbox"/>	Rectangle	Rhombus	Square	Trapezoid	Kite
1. Both pairs of opposite sides are congruent.						
2. Diagonals are congruent.						
3. Diagonals are perpendicular.						
4. Diagonals bisect one another.						
5. Consecutive angles are supplementary.						
6. Both pairs of opposite angles are congruent.						