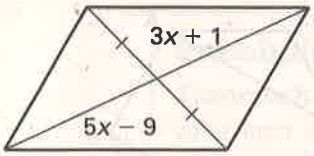
7.3

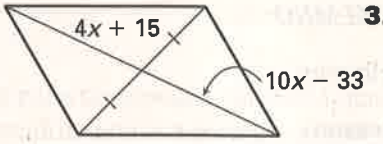
Date _____

For what value of x is the quadrilateral a parallelogram?

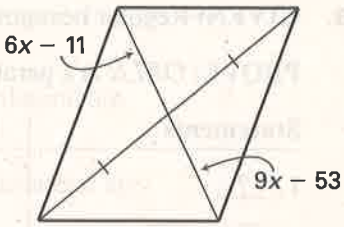
1.



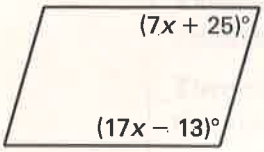
2.



3.



4.



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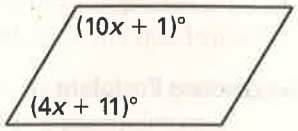

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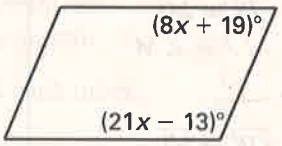


Decide whether you are given enough information to determine that the quadrilateral is a parallelogram.

7. Opposite sides are parallel.

8. Opposite sides are congruent.

9. Two pairs of consecutive sides are congruent.

10. Two pairs of consecutive angles are congruent.

11. Diagonals are congruent.

12. Diagonals bisect each other.

13. All four sides are congruent.

14. Consecutive angles are supplementary.

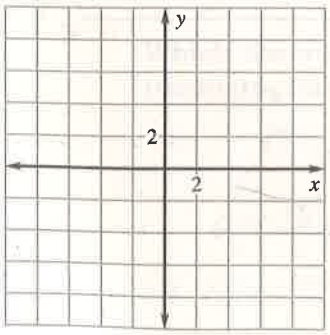
Prove that the points represent the vertices of a parallelogram. Use the method indicated.

15. $A(-4, 7)$, $B(3, 0)$, $C(2, -5)$, $D(-5, 2)$; Both pairs of opposite sides are parallel.

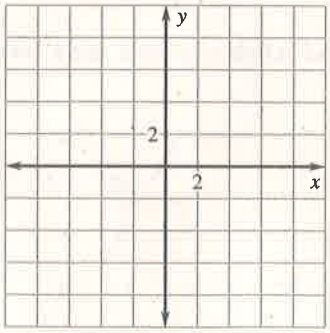
16. $A(-2, 8)$, $B(2, 7)$, $C(5, 1)$, $D(1, 2)$; Both pairs of opposite sides are congruent.

Find all the possible coordinates for the fourth vertex of a parallelogram with the given vertices. Then draw the parallelogram on the graph.

17. $(4, -1)$, $(-4, 1)$, $(0, 8)$



18. $(3, -4)$, $(-2, -1)$, $(1, 2)$



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Name _____ Date _____

LESSON 8.3

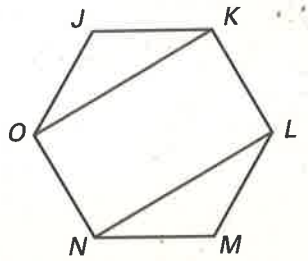
Practice C *continued*

For use with pages 522–529

Complete the proof.

19. **GIVEN:** Regular hexagon *JKLMNO*

PROVE: *OKLN* is a parallelogram.

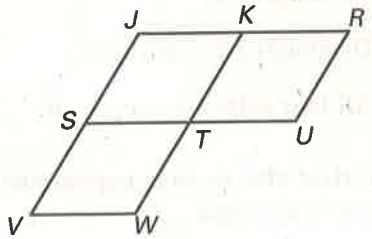


Statements	Reasons
1. ?	1. Given
2. $\overline{JO} \cong \overline{NM}$ $\overline{JK} \cong \overline{ML}$ $\angle J \cong \angle M$	2. ?
3. ?	3. SAS Congruence Postulate
4. $\overline{OK} \cong \overline{NL}$	4. ?
5. ?	5. Definition of regular polygon
6. *OKLN* is a ▱.	6. ?

20. Write a two-column proof.

GIVEN: *VWKJ* and *SJRU* are parallelograms.

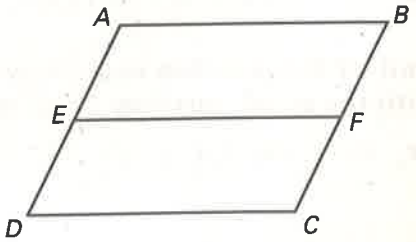
PROVE: $\angle W \cong \angle U$



21. Write a paragraph proof.

GIVEN: *ABCD* is a ▱.
E is the midpoint of $\overline{AD}$.
F is the midpoint of $\overline{BC}$.

PROVE: Quadrilateral *ABFE* is a parallelogram.



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