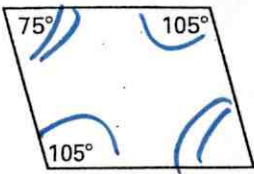
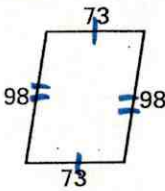
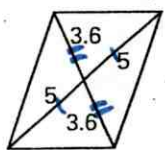


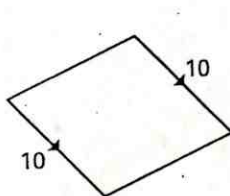
LESSON 8.3 Practice
For use with pages 522-529

What theorem can you use to show that the quadrilateral is a parallelogram?

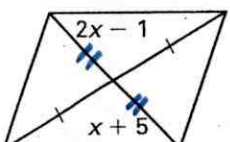
1.  *opp. \angle s \cong
8.8*

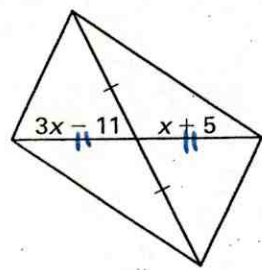
2.  *opp. sides \cong*

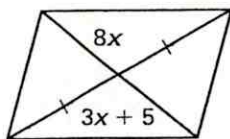
3.  *diagonals bisect*

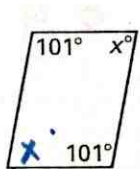
4.  *one pair sides \cong and \parallel*

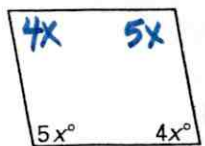
For what value of x is the quadrilateral a parallelogram?

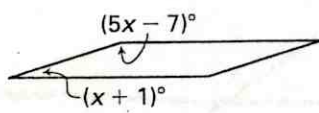
5.  *$2x-1 = x+5$
 $x-1 = 5$
 $x = 6$*

6.  *$3x-11 = x+5$
 $2x-11 = 5$
 $2x = 16$
 $x = 8$*

7. 

8.  *$x + 101 = 180$
 $x = 79$*

9.  *$5x + 4x = 180$
 $9x = 180$
 $x = 20$*

10.  *$(5x-7) + (x+1) = 180$
 $6x - 6 = 180$
 $6x = 186$
 $x = 31$*

LESSON 8.3

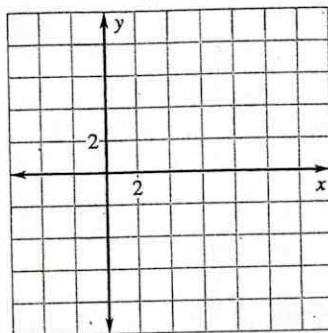
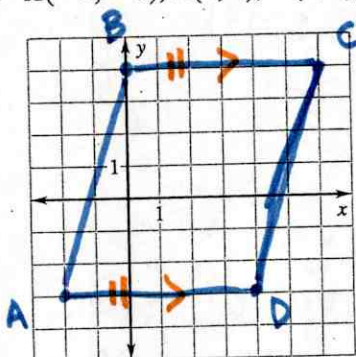
Practice *continued*
For use with pages 522-529

Parallel lines have the same slope

The vertices of quadrilateral $ABCD$ are given. Draw $ABCD$ in a coordinate plane and show that it is a parallelogram.

11. $A(-2, -3), B(0, 4), C(6, 4), D(4, -3)$

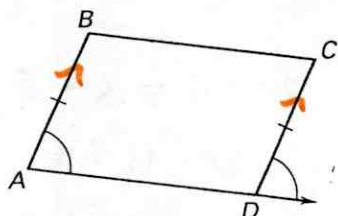
12. $A(-3, -4), B(-1, 2), C(7, 0), D(5, -6)$



Slope \overline{BC} : $m=0$ $BC=6$
Slope \overline{AD} : $m=0$ $AD=6$

Describe how to prove that $ABCD$ is a parallelogram.

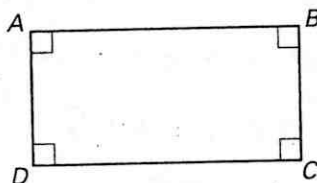
13.



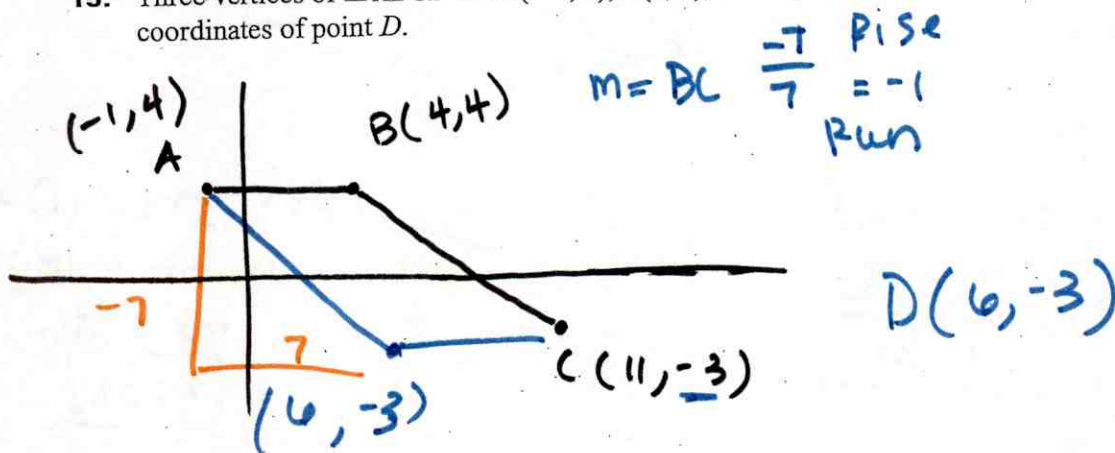
$\overline{AB} \cong \overline{CD}$ Given
 $\angle A \cong \angle D$ Given
 $\overline{AB} \parallel \overline{CD}$ CCA

$ABCD$ is \parallel -gram Thm. 8.9

14.



15. Three vertices of $\square ABCD$ are $A(-1, 4)$, $B(4, 4)$, and $C(11, -3)$. Find the coordinates of point D .



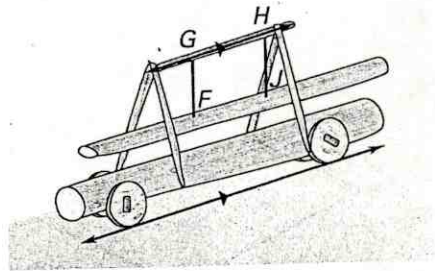
$m = \frac{-7}{7} = -1$
Rise
Run

$4 - 7 = -3$
 $-1 + 7 = 6$

LESSON
8.3

Practice *continued*
For use with pages 522-529

16. **History** The diagram shows a battering ram which was used in ancient times to break through walls. A log is suspended on ropes of equal length (\overline{GF} and \overline{HJ}). The log swings, causing quadrilateral $FGHJ$ to shift. In the diagram, $\overline{GH} \cong \overline{FJ}$ and \overline{GH} is parallel to the ground.

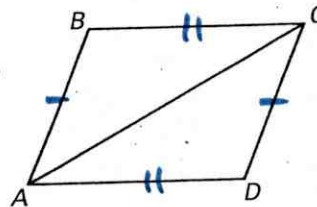


- a. Identify $FGHJ$. Explain.
- b. Explain why the log is always parallel to the ground.

17. **Proof** Use the diagram at the right.

GIVEN: $\triangle ABC \cong \triangle CDA$

PROVE: $ABCD$ is a parallelogram.



statements

Reasons

1. $\triangle ABC \cong \triangle CDA$

1. Given

2. $\overline{AB} \cong \overline{CD}$ and
 $\overline{AD} \cong \overline{BC}$

2. CPCTC

3. $ABCD$ is \parallel -gram

3. opp. sides \cong
Thm 8.7