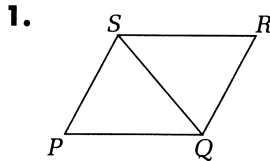


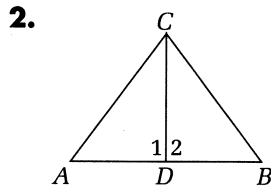
# Practice 19

For use with Section 3-1

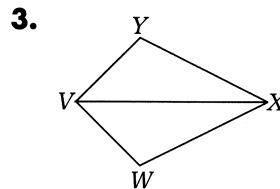
Each pair of triangles has given information stated. Which pairs can be proved congruent? What postulate or theorem would you use in each case?



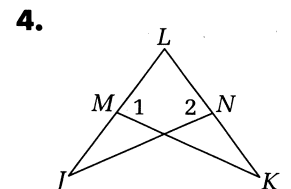
Given:  $PQ = RS$ ;  
 $PS = QR$



Given:  $AD = DB$ ;  
 $m\angle 1 = m\angle 2$

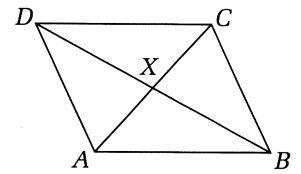


Given:  $VW = VY$ ;  
 $m\angle W = m\angle Y$



Given:  $LM = LN$ ;  
 $m\angle 1 = m\angle 2$

For Exercises 5–8, tell whether each implication about the quadrilateral shown at the right is true. State the converse of each. Tell whether the converse is true.



5. If  $ABCD$  is a parallelogram, then  $AX = CX$  and  $DX = BX$ .
6. If  $AB = CD$ , then  $ABCD$  is a parallelogram.
7. If  $ABCD$  is a rectangle, then  $AC = BD$ .
8. If  $\overline{AB} \parallel \overline{DC}$  and  $\overline{AD} \parallel \overline{BC}$ , then  $ABCD$  is a parallelogram.

Each of these implications is true. State its converse, inverse, and contrapositive. Determine which are true and which are false. Give a counterexample for each false one.

9. If today is Thanksgiving Day, then it is Thursday.
10. If you are 18 or older and a U.S. citizen, then you can vote in a Presidential election.
11. A theorem states: “If a quadrilateral is a parallelogram, then its opposite angles are equal in measure.” Prove this theorem for one pair of opposite angles. *Hint:* Draw the diagonal of the parallelogram that connects the other pair of opposite angles.
12. **Open-ended** The road sign “Keep right except to pass,” could be rewritten “If you are not passing another car, keep right.” Rewrite some other road signs as implications.