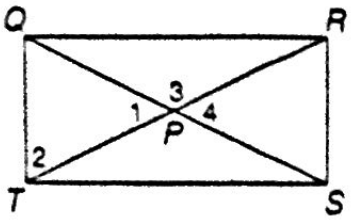
Lesson 6-3 Use rectangle $QRST$ and the given information to solve each problem.



1. $QP = 6$, find RT.
2. $QT = 8$, find RS.
3. $PT = 3x$ and $PS = 18$, find x.
4. $m\angle 1 = 55$, find $m\angle 2$.
5. $m\angle 3 = 110$, find $m\angle 4$.

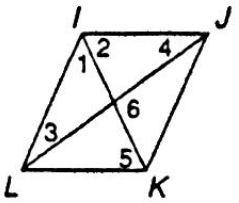
Determine whether each statement is *true* or *false*. Justify your answer.

6. If a parallelogram has congruent diagonals, then it is a rectangle.
7. If the diagonals of a quadrilateral bisect each other, then it is a rectangle.
8. If a quadrilateral is a rectangle, then it has four right angles.

Determine whether $PQRS$ is a rectangle. Justify your answer.

9. $P(12, 2)$, $Q(12, 8)$, $R(-3, 8)$, $S(-3, 2)$
10. $P(0, -3)$, $Q(4, 8)$, $R(11, 7)$, $S(7, -4)$

Lesson 6-4 Use rhombus $IJKL$ and the given information to find each value.

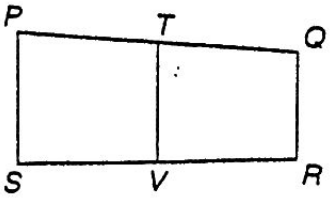


1. If $m\angle 3 = 62$, find $m\angle 1$.
2. If $m\angle 4 = 3x - 1$ and $m\angle 3 = 2x + 30$, find the value of x.
3. If $m\angle 5 = 2(x + 1)$ and $m\angle 3 = 4(x + 1)$, find the value of x.
4. If $m\angle 6 = 7x + 13$, find the value of x.
5. If $m\angle LKJ = x^2 - 17$ and $m\angle 2 = x + 23$, find the value of x.

Name all the quadrilaterals—*parallelogram*, *rectangle*, *rhombus*, or *square*—that have each property.

6. The opposite sides are parallel.
7. The opposite sides are congruent.
8. All angles congruent.

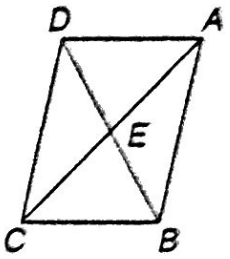
Lesson 6-5 $PQRS$ is an isosceles trapezoid with bases $\overline{PS}$ and $\overline{QR}$ and median $\overline{TV}$. Use the given information to solve each problem.



1. If $PS = 20$ and $QR = 14$, find TV.
2. If $QR = 14.3$ and $TV = 23.2$, find PS.
3. If $TV = x + 7$ and $PS + QR = 5x + 2$, find x.
4. If $m\angle RVT = 57$, find $m\angle QTV$.
5. If $m\angle VTP = a$, find $m\angle TPS$ in terms of a.

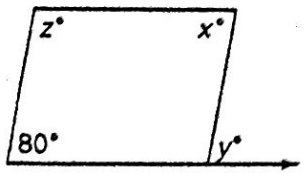
Lesson 6-1 Complete each statement about $\square ABCD$. Then name the theorem or definition that justifies your answer.

1. $\overline{AB} \parallel$?
2. $\overline{DA} \cong$?
3. $\triangle ADC \cong$?
4. $\angle CDA \cong$?
5. $\overline{DE} \cong$?
6. $\angle BAC \cong$?



For each parallelogram, find the values of x, y, and z.

7.



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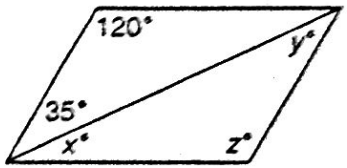

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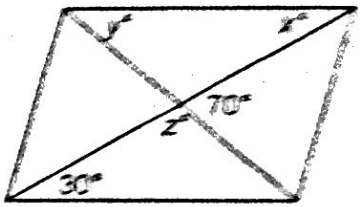
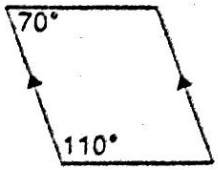
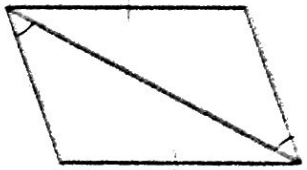


Lesson 6-2 Determine if each quadrilateral is a parallelogram. Justify your answer.

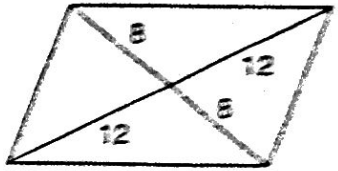
1.



2.

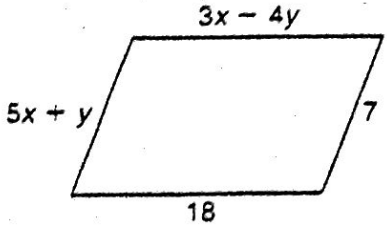


3.

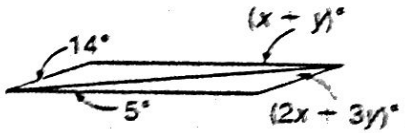


Find the values of x and y that ensure each quadrilateral is a parallelogram.

4.



5.



6.