Geometry

Review 8.4-8.6

Name _____

For any rhombus *ABCD*, decide whether the statement is *always* or *sometimes* true. Draw a diagram and *explain* your reasoning.

1. $\angle ABC \cong \angle CDA$

2. $\overline{CA} \cong \overline{DB}$

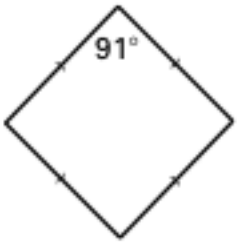
For any rectangle *FGHJ*, decide whether the statement is *always* or *sometimes* true. Draw a diagram and *explain* your reasoning.

3. $\angle F \cong \angle H$

4. $\overline{GH} \cong \overline{HJ}$

Classify the quadrilateral. *Explain* your reasoning.

5.



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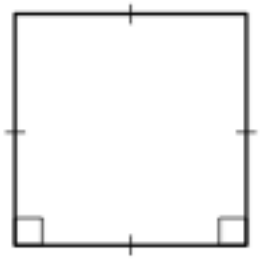


Name each quadrilateral—*parallelogram, rectangle, rhombus,* and *square*—for which the statement is true.

7. It is equilateral.

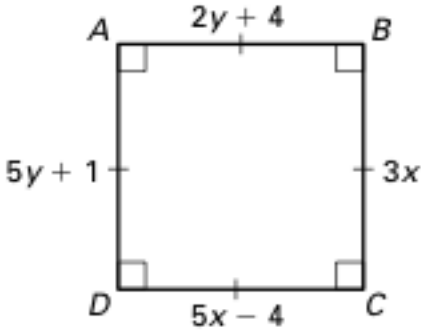
8. The diagonals are congruent.

9. It can contain obtuse angles.

10. It contains no acute angles.

Classify the special quadrilateral. *Explain* your reasoning. Then find the values of *x* and *y*.

11.



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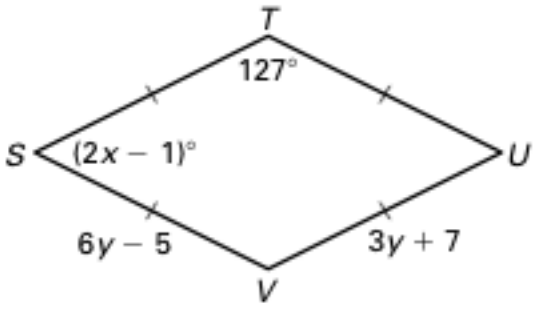
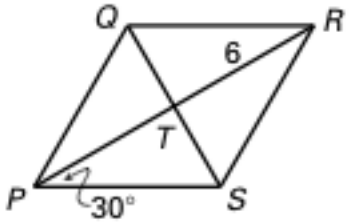


The diagonals of rhombus *PQRS* intersect at *T*. Given that $m\angle RPS = 30°$ and $RT = 6$, find the indicated measure.



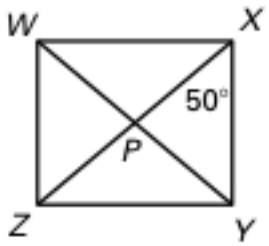
13. $m\angle QPR$

14. $m\angle QTP$

15. RP

16. QT

The diagonals of rectangle *WXYZ* intersect at *P*. Given that $m\angle YXZ = 50°$ and $XZ = 12$, find the indicated measure.



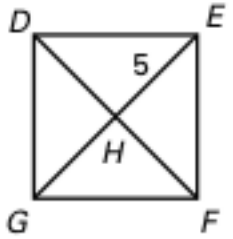
17. $m\angle WXZ$

18. $m\angle WPX$

19. PY

20. WX

The diagonals of square *DEFG* intersect at *H*. Given that $EH = 5$, find the indicated measure.



21. $m\angle GHF$

22. $m\angle DGH$

23. HF

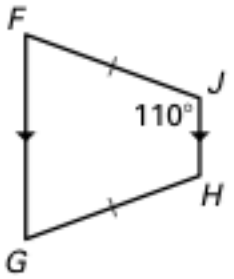
24. DE

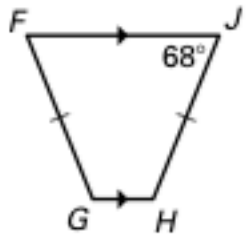
LESSON
8.5

Points *A*, *B*, *C*, and *D* are the vertices of a quadrilateral. Determine whether *ABCD* is a trapezoid.

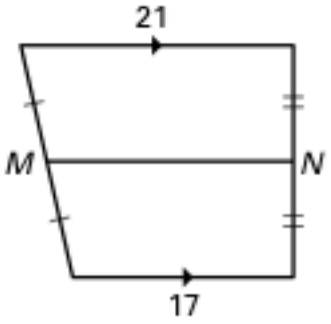
1. $A(-2, 3), B(3, 3), C(-1, -2), D(2, -2)$
2. $A(-3, 2), B(3, 0), C(4, 3), D(-2, 5)$
3. $A(-5, -3), B(-1, -1), C(-1, 3), D(-3, 2)$

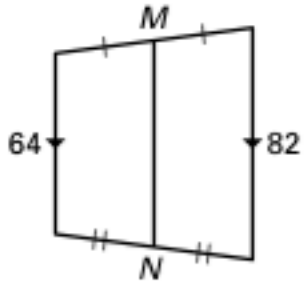
Find $m\angle F$, $m\angle G$, and $m\angle H$.

4. 

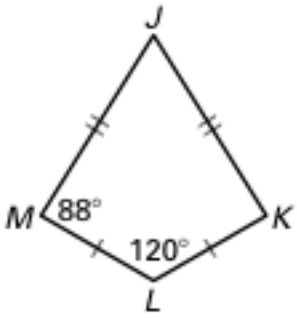
5. 

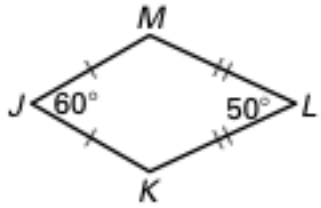
Find the length of the midsegment of the trapezoid.

6. 

7. 

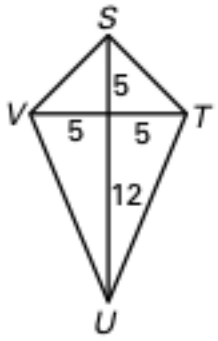
***JKLM* is a kite. Find $m\angle K$.**

8. 

9. 

Use Theorem 18 and the Pythagorean Theorem to find the side lengths of the kite. Write the lengths in simplest radical form.

10.



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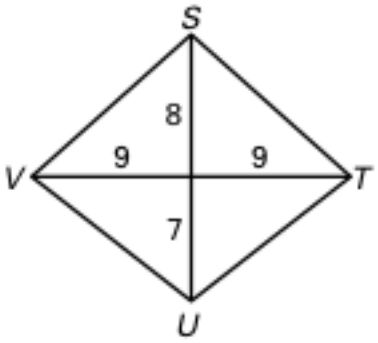
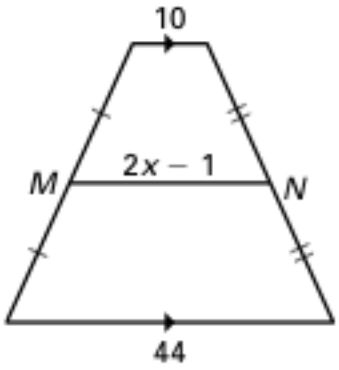


Find the value of *x*.

12.



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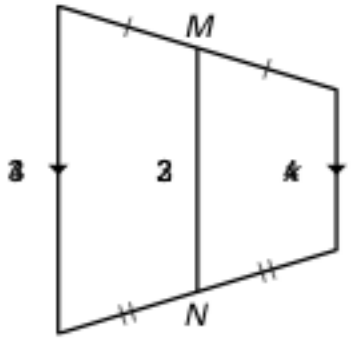

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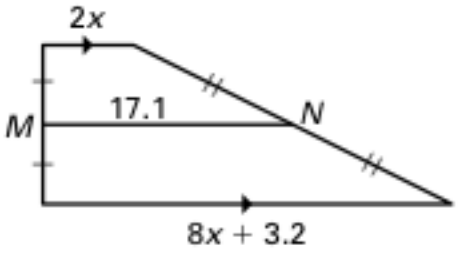

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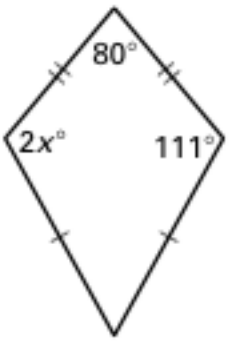


LESSON
8.6

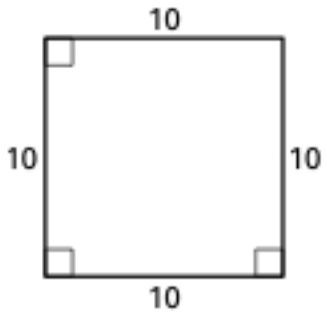
Complete the chart. Put an X in the box if the shape *always* has the given property.

	Property	▱	Rectangle	Rhombus	Square	Kite	Trapezoid
1.	Both pairs of opposite sides are congruent.						
2.	Both pairs of opposite angles are congruent.						
3.	Exactly one pair of opposite sides are congruent.						
4.	Exactly one pair of opposite sides are parallel.						
5.	Exactly one pair of opposite angles are congruent.						
6.	Consecutive angles are supplementary.						

Give the most specific name for the quadrilateral. *Explain*.

7.

8.



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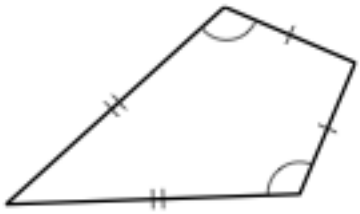

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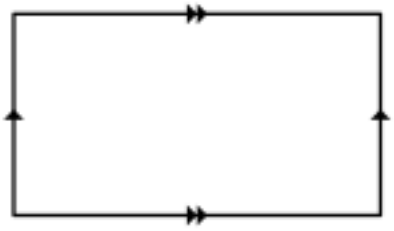
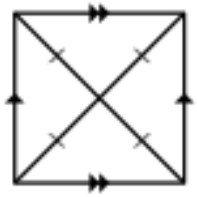
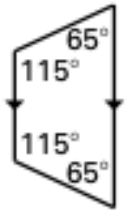


Tell whether enough information is given in the diagram to classify the quadrilateral by the indicated name.

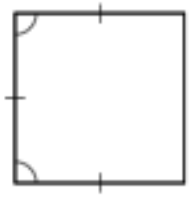
11. Rectangle



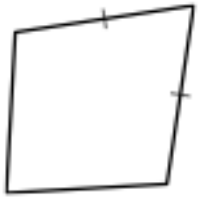
12. Isosceles trapezoid



13. Rhombus

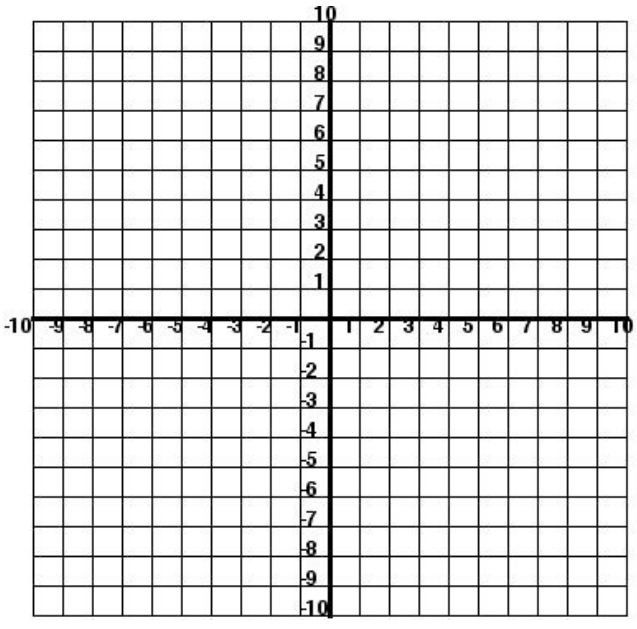


14. Kite

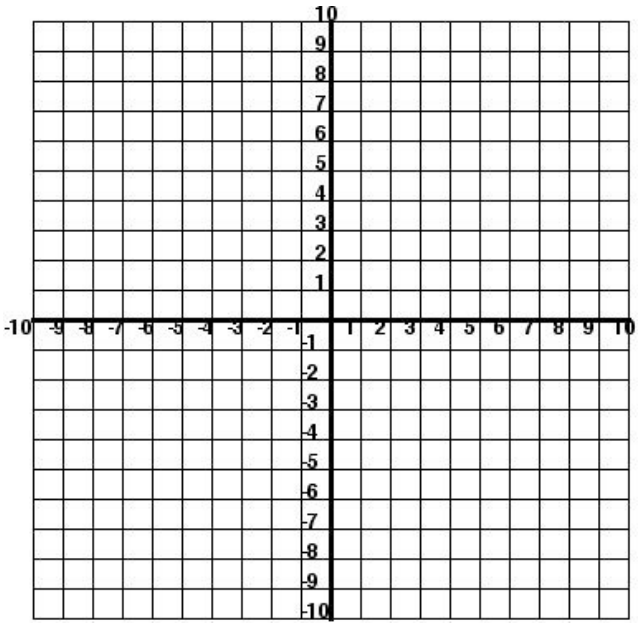


Points *A*, *B*, *C*, and *D* are the vertices of a quadrilateral. Give the most specific name for *ABCD*. *Justify* your answer.

15. $A(2, 2), B(4, 6), C(6, 5), D(4, 1)$

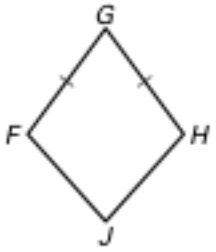


16. $A(-5, 1), B(0, -6), C(5, 1), D(0, 3)$

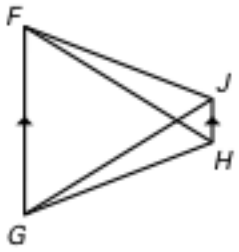


In Exercises 17 and 18, which two segments or angles must be congruent so that you can prove that *FGHJ* is the indicated quadrilateral? There may be more than one right answer.

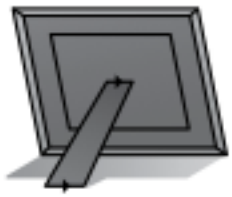
17. Kite



18. Isosceles trapezoid



19. Picture Frame What type of special quadrilateral is the stand of the picture frame at the right?



20. Painting A painter uses a quadrilateral shaped piece of canvas. The artist begins by painting lines that represent the diagonals of the canvas. If the lengths of the painted lines are congruent, what types of quadrilaterals could represent the shape of the canvas? If the painted lines are also perpendicular, what type of quadrilateral represents the shape of the canvas?

Rhombus: _____

Rectangle: _____

Square: _____

Trapezoid: _____

Bases of a Trapezoid: _____

Base Angles of a Trapezoid: _____

Legs of a Trapezoid: _____

Isosceles Trapezoid: _____

Midsegment of a Trapezoid: _____

Kite: _____