Number: _____

Name: _____

Unit 2B: Properties of Quadrilaterals and Similarity

Geometry

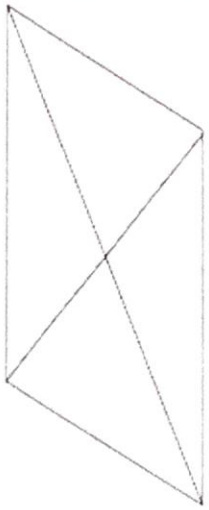
Spring 2019

Quadrilateral Properties Chart

	Parallelogram	Rectangle	Rhombus	Square	Trapezoid	Isosceles Trapezoid	Kite
SKETCH EACH QUADRILATERAL							
2 pair of opposite sides are $\parallel$							
Exactly 1 pair of opposite sides are $\parallel$							
2 pair of opposite sides are $\cong$							
2 pair of adjacent sides are $\cong$							
Exactly 1 pair of $\cong$ sides							
All sides are $\cong$							
Opposite $\angle$'s $\cong$							
Exactly 1 pair of $\cong$ angles							
All $\angle$'s 90°							
Both diagonals bisect each other							
Diagonals are $\cong$							
Diagonals are perpendicular							
One diagonal is bisected							
Diagonals bisect both pair of opposite angles							
One diagonal bisects opposite angles							
Consecutive $\angle$'s are supplementary							

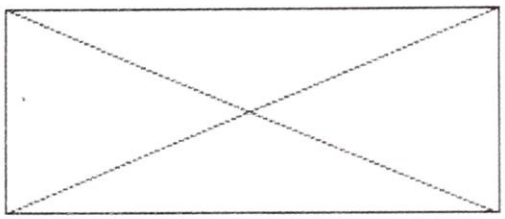
Name: _____ Date: _____ Block: _____

Quadrilateral: _____



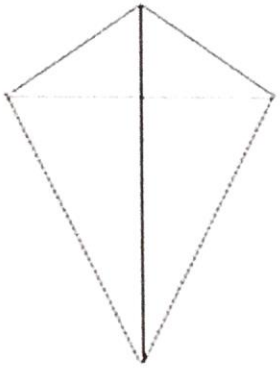
- Both pairs of opposite sides are _____.
- Both pairs of opposite sides are _____.
- Diagonals bisect each other.
- Both pairs of opposite angles are _____.
  (**ALL angles are congruent** - _____).
- Consecutive angles are _____.
- Diagonals are _____.

Quadrilateral: _____



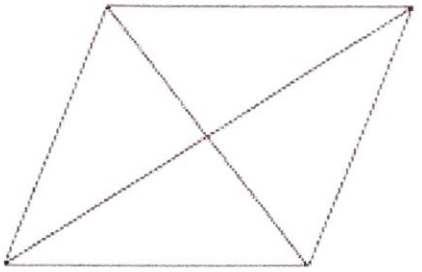
- Both pairs of opposite sides are _____.
- Both pairs of opposite sides are _____.
- Diagonals _____.
- Both pairs of opposite angles are _____.
  (**ALL angles are congruent** - _____).
- Consecutive angles are _____.
- Diagonals are _____.

Quadrilateral: _____



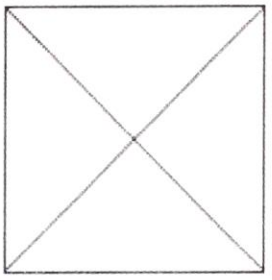
- Both pairs of consecutive sides are _____.
  (_____).
- Diagonals are _____.
- Exactly one pair of opposite angles are _____.
  (angles formed by 1 small side and 1 large side are _____).
- Short diagonal is _____.
- No parallel sides _____.

Quadrilateral: _____



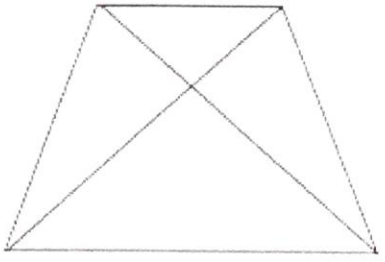
- Both pairs of opposite sides are _____.
- Both pairs of opposite sides are _____
  (**ALL sides are** _____).
- Diagonals _____.
- Diagonals are _____.
- Diagonals _____.
- Both pairs of opposite angles are _____.
- Consecutive angles are _____

Quadrilateral: _____



- Both pairs of opposite sides are _____.
- Both pairs of opposite sides are _____.
- Diagonals are _____.
- Diagonals _____.
- Diagonals are _____.
- Diagonals _____.
- Both pairs of opposite angles are _____.
- Consecutive angles are _____.

Quadrilateral: _____

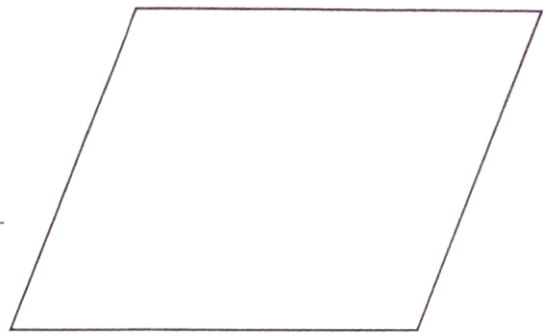


- Exactly _____
  (These are called _____).
- Exactly _____
  _____
  (Same _____).

Quadrilaterals are polygons with _____ _____.

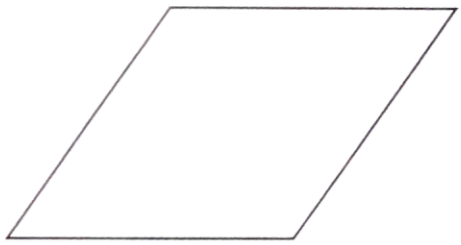
Parallelogram

- Opposite sides are _____
- Opposite sides are _____
- Opposite angles are _____
- Consecutive angles are _____
- Diagonals _____ each other.



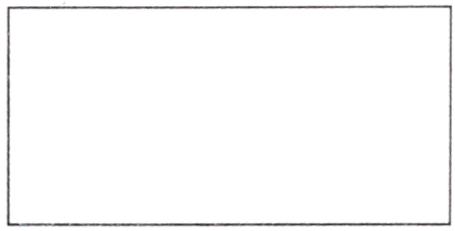
Rhombus

- **ALL** of the properties of a parallelogram **PLUS:**
- All sides are _____
- Diagonals are _____
- Diagonals _____ angles



Rectangle

- **ALL** of the properties of a parallelogram **PLUS**
- Has four _____ _____
- Diagonals are _____

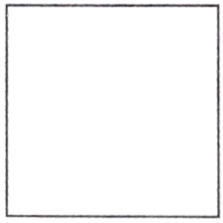


Square

- _____

_____

_____



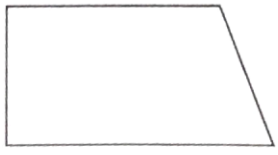
Other Quadrilaterals

Kite

- Diagonals are _____
- One pair of angles are _____

Trapezoid

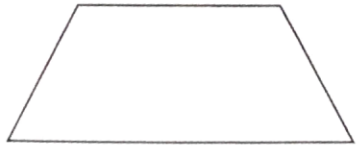
One pair of _____ lines



Isosceles Trapezoid

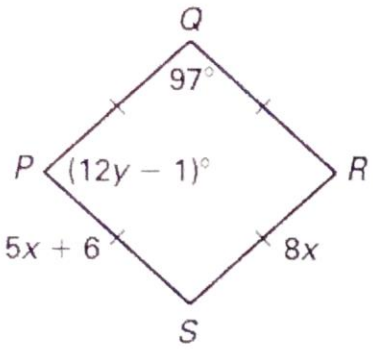
Base angles are _____

One pair of _____ lines



Name: _____ Date: _____

Quadrilateral Practice

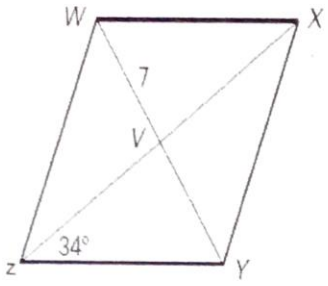


What specific quadrilateral is the figure? _____

How do you know? It has four congruent _____

Therefore, it is also a _____.

Solve for x: Solve for y:



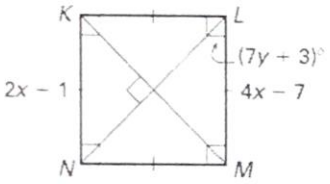
All sides of the figure are congruent and $m\angle WZV = 34^\circ$.

What specific quadrilateral is the figure?

How do you know?

- Diagonals _____ angles
- It has four congruent _____

Solve for $m\angle WVZ$



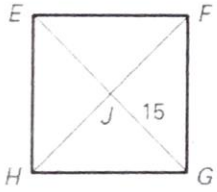
What specific quadrilateral is the figure?

How do you know? Solve for x:

- Diagonals are _____
- It has four congruent _____
- It has four _____ _____ Solve for y:

Therefore it is also a _____

_____.



EFGH is a square. We know that the diagonals are _____

And that the diagonals lengths are _____

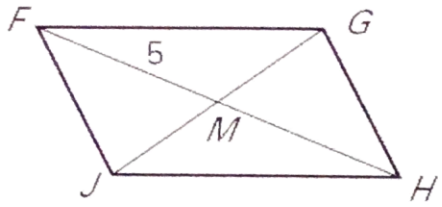
Find $m\angle EJF$

Find the measure of $\overline{HF}$

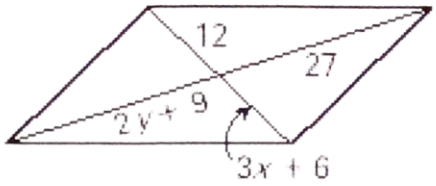
Name _____ Date _____ Block _____

Quadrilaterals

1. Given that $\square FGHJ$ is a parallelogram, find MH and FH.

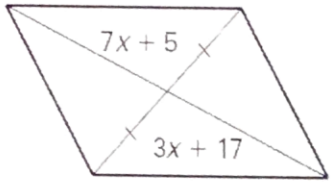


2. Find x, and y.

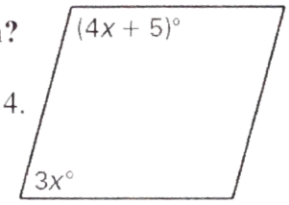


For what value of x is the quadrilateral a parallelogram?

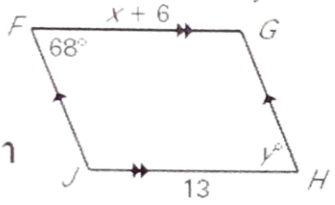
3.



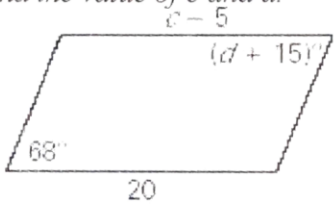
4.



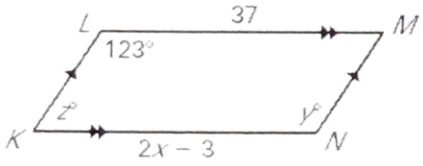
5. Find the values of x and y.



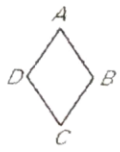
6. *Find the value of c and d.*



7. **Find x, y and z in $\square$ *KLMN*.**

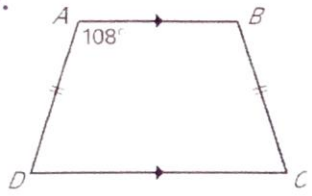


8. **Gates** As shown, a gate contains several parallelograms. Find $m\angle ADC$ when $m\angle DAB = 65°$.

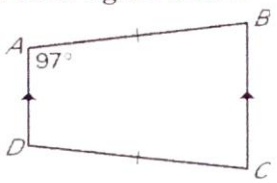


Find the measure of angles B, C, and D in each figure below.

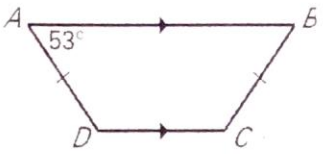
9.



10.

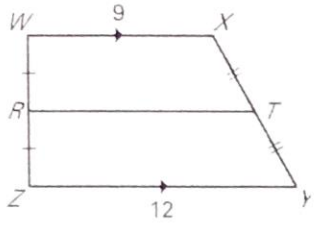


11.

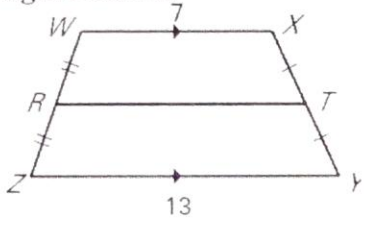


Find the length of segment RT in each figure below.

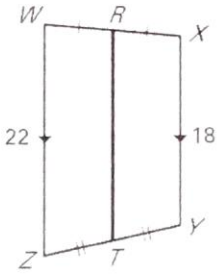
12.



13.

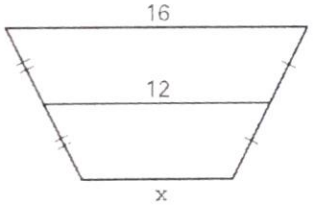


14.

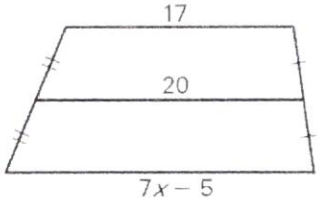


Find the value of x in each figure below.

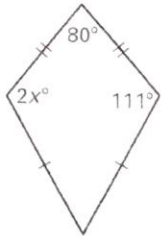
15.



16.



17.

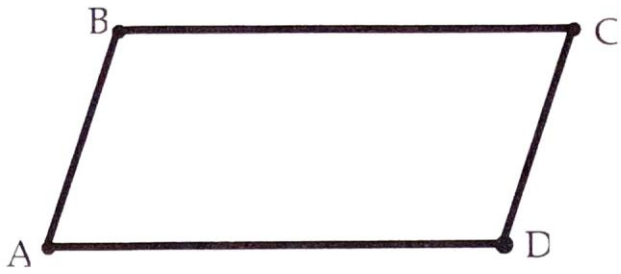


Parallelograms

Definition:

A quadrilateral whose _____.

$\overline{AB} \| \overline{CD}$ and $\overline{BC} \| \overline{AD}$



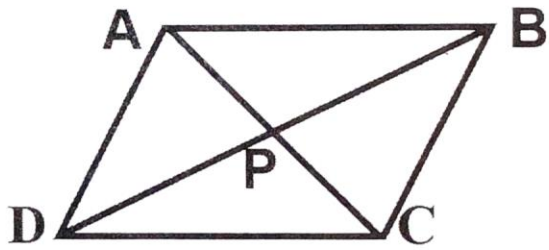
Symbol:

A smaller version _____. ▱

Naming:

- A parallelogram is named using _____.
- You can start from any one vertex, but you must continue in a _____.
- For example, the figure above can be either ▱ABCD or ▱ADCB.

Properties of a parallelogram



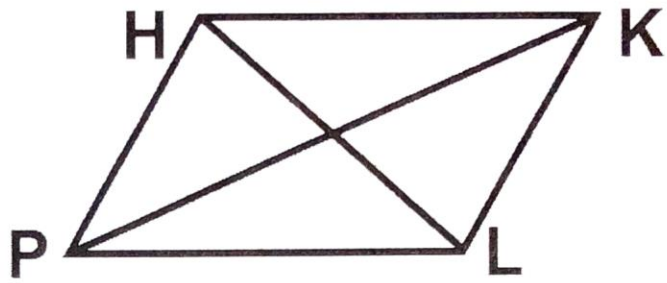
1. Both pairs of opposite sides are congruent.

2. Both pairs of opposite angles are congruent.

3. Consecutive angles are supplementary.

4. Diagonals bisect each other but are not congruent

Examples



1. Draw ▱HKLP.
2. HK = _____ and HP = _____ .
3. m<K = m<_____ .
4. m<L + m<_____ = 180°.
5. If m<P = 65°, then m<H = _____,m<K = _____ and m<L =_____.
6. Draw the diagonals with their point of intersection labeled *M*.
7. If HM = 5, then ML = _____ .
8. If KM = 7, then KP = _____ .
9. If HL = 15, then ML = _____ .
10. If m<HPK = 36°, then m<PKL = _____ .