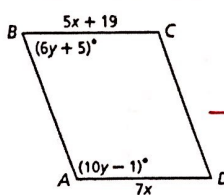


1. ABCD is a parallelogram.

Find  $m\angle B$  and BC.



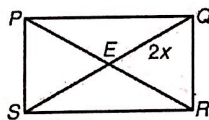
Opp. sides congruent  
 $5x + 19 = 7x$   
 $19 = 2x$   
 $9.5 = x$   
 $BC = 5(9.5) = 47.5 + 19 = 66.5$

Consecutive angles supp.  
 $(6y + 5) + (10y - 1) = 180$   
 $16y + 4 = 180$   
 $16y = 176$   
 $y = 11$   
 $m\angle B = 6(11) + 5 = 66 + 5 = 71$

2. Which is NOT always true?

- A A square is a rhombus.
- B A rectangle is a parallelogram.
- C A rhombus is a rectangle.**
- D A square is a rectangle.

3. PQRS is a rectangle.  $PR = 26$ . What is the value of  $x$ ?



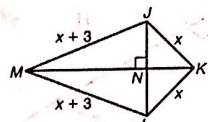
If  $PR = 26$ ,  $QS = 26$   
 (Diagonals are  $\cong$ )  
 $QE = \frac{1}{2}$  of 26  
 (Diagonals bisect each other)  
 $QE = 13$   
 $2x = 13$   
 $x = 6.5$

4. Which best describes the figure?

Explain.

**A kite**

- B parallelogram
- C quadrilateral
- D trapezoid

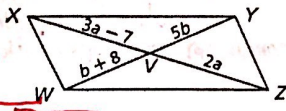


The figure has 2 pairs of consecutive congruent sides ( $x+3$  and  $x$ ), which is the def. of kite.

5. For the parallelogram, find XZ and WY.

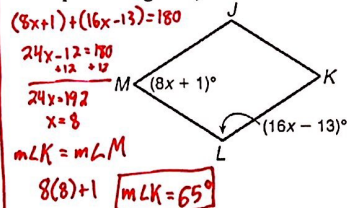
$3a - 7 = 2a$   
 $+7$   
 $3a = 2a + 7$   
 $-2a$   
 $a = 7$

$b + 8 = 5b$   
 $8 = 4b$   
 $2 = b$   
 $wv = 2 \cdot 8 = 10$   
 $wy = 20$



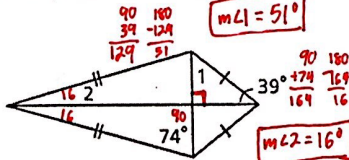
$xv = 3 \cdot 7 = 21$   
 $xz = 21 + 7 = 28$

6. In parallelogram JKLM what is  $m\angle K$ ?



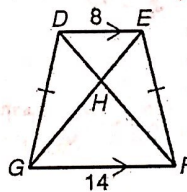
$(8x + 1) + (16x - 13) = 180$   
 $24x - 12 = 180$   
 $+12$   
 $24x = 192$   
 $x = 8$   
 $m\angle K = m\angle M$   
 $8(8) + 1 = 65$   
 $m\angle K = 65$

7. In the kite, find  $m\angle 1$  and  $m\angle 2$ .



$m\angle 1 = 51$   
 $m\angle 2 = 16$

8.  $GE = 5x + 2$  and  $DF = 8x - 7$ . What is  $GE$ ?

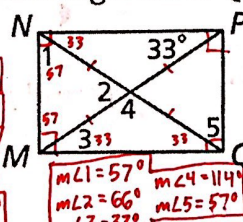
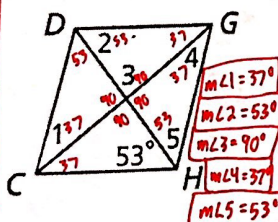


Diagonals are  $\cong$   
 $5x + 2 = 8x - 7$   
 $2 = 3x - 7$   
 $+7$   
 $9 = 3x$   
 $3 = x$   
 $GE = 5(3) + 2 = 17$

9. Find all numbered angles for each.

rhombus CDGH

rectangle MNPQ



$m\angle 1 = 37$   
 $m\angle 2 = 53$   
 $m\angle 3 = 90$   
 $m\angle 4 = 37$   
 $m\angle 5 = 53$

$m\angle 1 = 57$   
 $m\angle 2 = 66$   
 $m\angle 3 = 33$   
 $m\angle 4 = 114$   
 $m\angle 5 = 57$

10. Tell whether each figure must be a rectangle, rhombus or a square based on the information given. Use the most specific name possible.



Rectangle

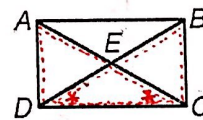


Square



Rhombus

11. Given: ABCD is a rectangle. Prove:  $\angle EDC \cong \angle ECD$

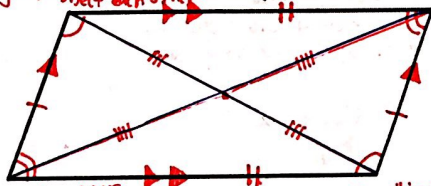


Plan: prove  $\triangle ADC \cong \triangle BCD$ , then use CPCTC

Statements	Reasons
$\overline{AD} \cong \overline{BC}$	Opp. sides of a par. are congruent
$\angle ADC \cong \angle BCD$	Def. of rectangle
$\overline{DC} \cong \overline{CD}$	Reflexive Prop.
$\triangle ADC \cong \triangle BCD$	SAS
$\angle EDC \cong \angle ECD$	CPCTC

# Quadrilaterals

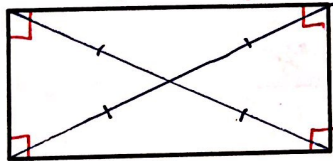
- Opposite sides parallel (definition)
- Opposite sides congruent
- Opposite angles congruent
- Consecutive angles supplementary
- Diagonals bisect each other



Parallelogram

Everything from above PLUS:

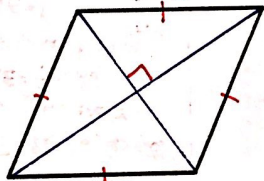
- Has 4 90° angles (definition)
- Diagonals are congruent



Rectangle

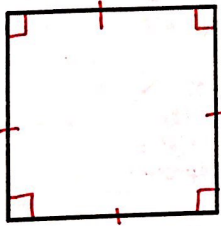
Everything from above PLUS:

- Has 4 congruent sides (definition)
- Diagonals are perpendicular



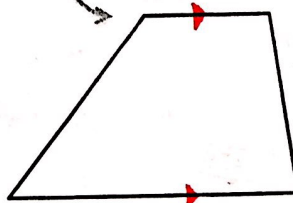
Rhombus

Both



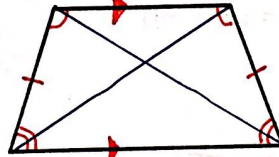
Square

Only one pair of parallel sides



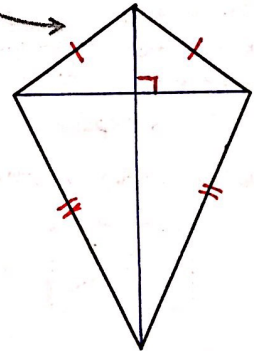
Trapezoid

- Legs congruent (definition)
- Base angles congruent
- Diagonals congruent



Isosceles Trapezoid

- 2 pairs of consecutive congruent sides (definition)
- No sides parallel
- Diagonals are perpendicular



Kite