

# Parallelograms (part 1)

$$\frac{2880}{180} = \frac{(n-2)180}{180}$$

$$\frac{16}{12} = \frac{n-2}{2}$$

$$18 = n$$

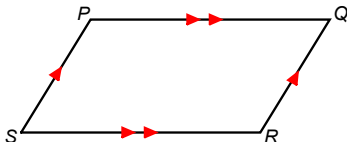
18-gon

title

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**Parallelogram**—a quadrilateral with both pairs of opposite sides parallel

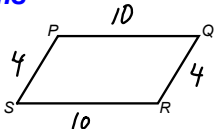
➤ The symbol for a parallelogram is  $\square$ .



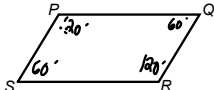
parallelogram

**Properties of Parallelograms**

Opposite sides are congruent.



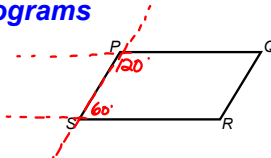
Opposite angles are congruent.



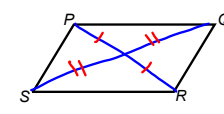
properties

**Properties of Parallelograms**

Consecutive angles are supplementary.



Diagonals bisect each other.



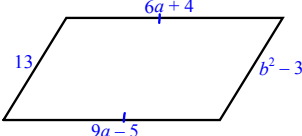
properties

Find the value of each variable in the parallelogram.

$$6a + 4 = 9a - 5$$

$$4 = 3a - 5$$

$$9 = 3a$$

$$a = 3$$


$$13 = b^2 - 3$$

$$\sqrt{13} = \sqrt{b^2 - 3}$$

$$4 = b$$

examples

Find the value of each variable in the parallelogram.

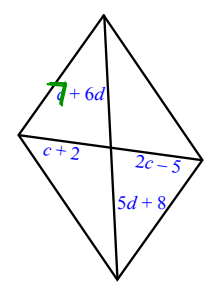
$$c + 2 = 2c - 5$$

$$2 = c - 5$$

$$7 = c$$

$$7 + 6d = 5d + 8$$

$$7 + d = 8$$

$$d = 1$$


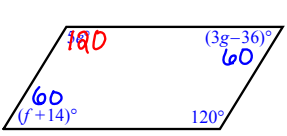
examples

Find the value of each variable in the parallelogram.

$$5e = 120$$

$$e = 24$$

$$f + 14 = 60$$

$$f = 46$$


$$3g - 36 = 60$$

$$3g = 96$$

$$g = 32$$

examples

Find the indicated measure in parallelogram VWZY.

$m\angle VXW = 127^\circ$   
 $m\angle VZW = 38^\circ$   
 $m\angle YWZ = 89^\circ$   
 $m\angle ZVW = 20^\circ$   
 $m\angle YZW = 58^\circ$   
 $m\angle VYZ = 122^\circ$

**Conclusion**

1. Name the properties of a Parallelogram.
  - ① Opp sides  $\cong$
  - ② Consecutive  $\angle$ s are supp.
  - ③ Diagonals bisect
  - ④ Opp sides  $\cong$
  - ⑤ Opp sides  $\parallel$
2. Questions???
3. Will these need to be memorized?  

YES!!

examples

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**Assignment**  
**Parallelogram Wkst #1**

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