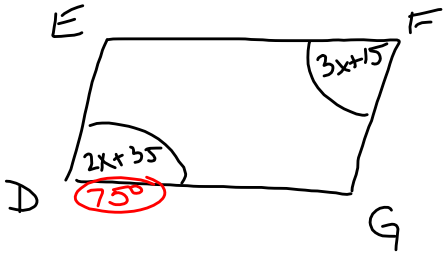
DO NOW

In parallelogram *DEFG*, m∠*D* = 2x + 35 and m∠F = 3x + 15. Find the value of x.



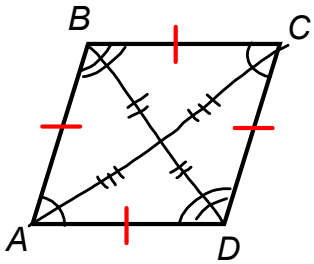
$2x + 35 = 3x + 15$

$20 = x$

$m\angle E = 105°$

Dec 13-9:57 AM

A rhombus is a quadrilateral with 4 congruent sides



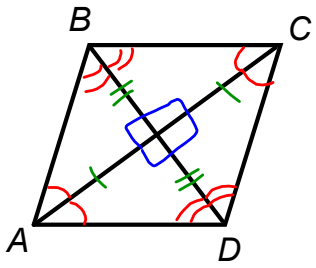
$$\overline{AB} \cong \overline{BC} \cong \overline{CD} \cong \overline{AD}$$

★ A rhombus IS a parallelogram ★

A rhombus is NOT a rectangle

Dec 10-10:33 AM

Properties of a Rhombus

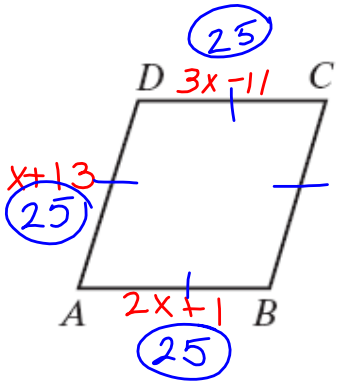


ALL the properties of a parallelogram, PLUS:

- The diagonals are perpendicular
  $\overline{AC} \perp \overline{BD}$
- The diagonals bisect its (vertex) angles

Dec 10-10:36 AM

1) *ABCD* is a parallelogram with $AB = 2x + 1$, $DC = 3x - 11$ and $AD = x + 13$. Is *ABCD* a rhombus? Explain your answer.



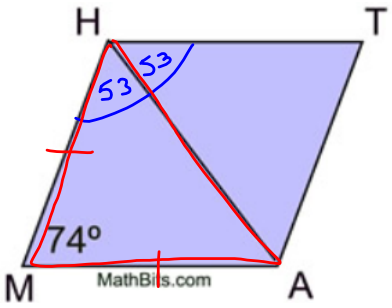
$3x - 11 = 2x + 1$

$x = 12$

Yes ABCD is a rhombus because it is a parallelogram with 2 consecutive sides ≅

Dec 13-10:07 AM

2) Given rhombus $MATH$ with $m\angle M = 74°$.
What is $m\angle MHA$?

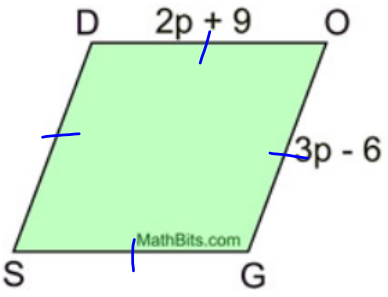


$180 - 74 = 106°$

$m\angle MHA = 53°$

Nov 30-9:54 AM

3) In rhombus $DOGS$, $DO = 2p + 9$ and $OG = 3p - 6$.
Find GS.



$2p + 9 = 3p - 6$

$15 = p$

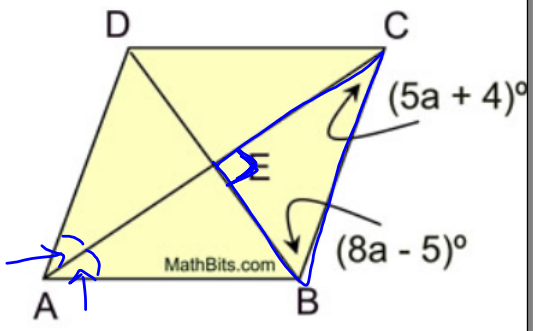
$2(15) + 9 = 39$

$3(15) - 6 = 39$

$GS = 39$

Nov 30-9:55 AM

4) In rhombus $ABCD$, $m\angle ECB = 5a+4$ and $m\angle EBC = 8a - 5$. Find $m\angle EBC$.



$5a+4+8a-5=90$

$13a=91$

$a=7$

$8(7)-5$

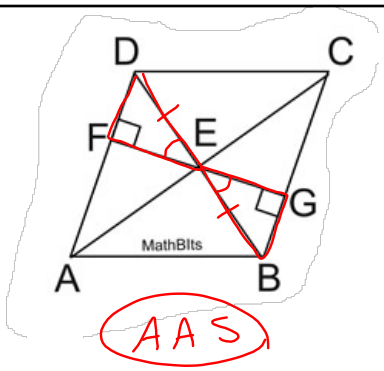
$m\angle EBC = 51°$

Nov 30-9:56 AM

5) Given: rhombus $ABCD$, $\overline{FG}$ diagonals $\overline{DB}, \overline{AC}$

$\overline{EG} \perp \overline{CB}; \overline{EF} \perp \overline{AD}$

Prove: $\overline{EF} \cong \overline{EG}$



AAS

Nov 30-9:51 AM