






Notes





Wednesday, November 19, 2014
3:50 PM

Rhombuses

Properties of a Rhombus

*All Properties of a Parallelogram

- 1) opp sides \cong 
- 2) opp sides \parallel 
- 3) 
- 4) 
- 5) 

- 6) All sides are \cong 
- 7) Diagonals \perp bisectors of each other 
- 8) Diagonals bisect the \angle 's 
- 9) \div into 4 \cong Right Δ 's 

QUADRILATERAL

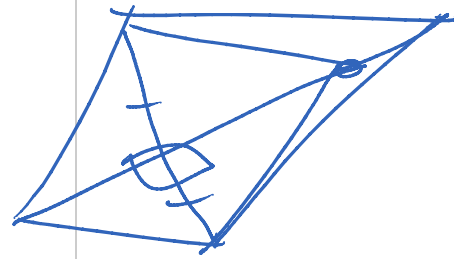


Quad

||-gram

Rect.

Rhombus



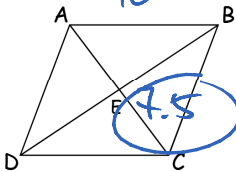
Ways to Prove That a Quadrilateral is a Rhombus

- 1) A ||-gram with one pair of Consec. sides \cong
- 2) A ||-gram with 2 Bisected \angle 's
- 3) If Diagonals are \perp Bisectors OF Each Other!

Ex 1:

- 1) Given: ABCD is a rhombus
 $m\angle AEB = 4x + 10$
 $AB = \frac{1}{2}x$
 $AC = x - 5$

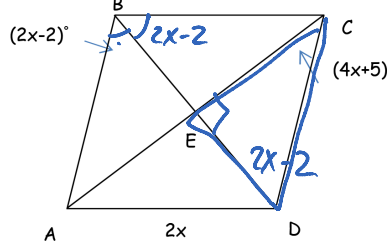
- Find: a) Perimeter of ABCD - 40
 b) EC -



$$4x + 10 = 90$$

$$x = 20$$

ex 2: Rhombus ABCD



$$4x + 5 + 2x - 2 = 90$$

$$6x + 3 = 90$$

$$6x = 87$$

$$12x + 6 = 180$$

$$12x = 174$$

$$x = 14.5$$

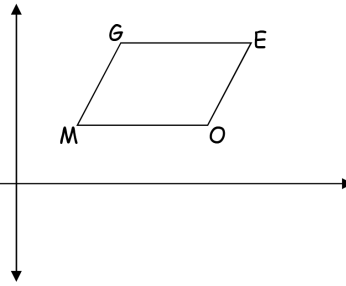
- 3) Given: GEOM is a rhombus
 G (6, 15), E (? , ?),
 O (14, 3), and M (1, 3)
 a) Find the coordinates of point E

(19, 15)

b) Find the slopes of \overline{GO} and \overline{EM}
 $\frac{15-3}{6-14} = \frac{12}{-8} = -\frac{3}{2}$
 $\frac{12}{8} = \frac{3}{2}$

- c) What does the result in part b verify

Perp!



4. Given: QRST is a rhombus
 $m\angle 3 = y^2 - 31$

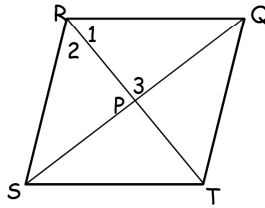
Find: y

$y = \pm 11$

- b. Given: QRST is a rhombus

$m\angle RST = 56$

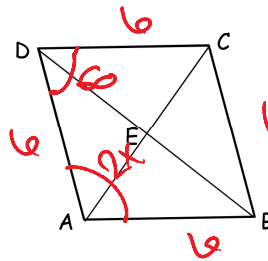
Find: $m\angle TQS = 28$



$y^2 - 31 = 90$
 $y^2 = 121$
 $y = \pm 11$

5. Given: Rhombus ABCD
 $m\angle DAB = 2(m\angle ADC)$
 $CB = 6$

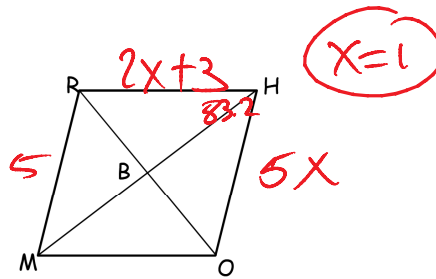
- Find: a. $m\angle ACD = 60$
 b. $m\angle DAB = 120$
 c. $DA = 6$
 d. $m\angle ADB = 30$



$2x + x = 180$

6. Given: Rhombus RHOM
 $RH = 2x + 3$
 $HO = 5x$

- Find: a. $x = 1$
 b. $RM = 5$
 c. $m\angle RBH = 90$
 d. $m\angle HOM$ if $m\angle RHO = 83.2$



$x = 1$

96.8°