

Key

Rhombi Homework

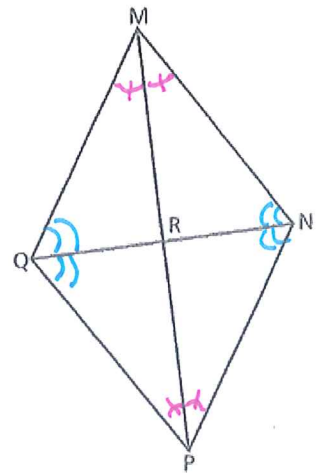
1. Fill in the blanks: Properties of Rhombi

- Opposite sides of a parallelogram are parallel
- Opposite angles of a parallelogram are equal
- Consecutive angles of a parallelogram are suppl.
- The sum of the angles of a parallelogram are = 360°
- The diagonals of a parallelogram bisect each other.
- Diagonals are perpendicular to each other
- Diagonals bisect the angles

2. Use rhombus MNPQ to answer the following questions. You must state the property you used.

a.) List congruent segments.

$QR \cong RN$, $MR \cong RP$ diagonals bisect each other
 $MQ \cong MN \cong NP \cong PQ$
 def of Rhombus 4 \cong sides

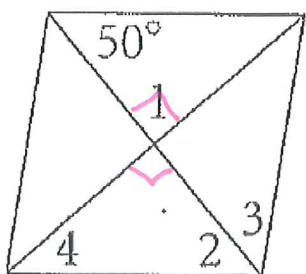


b.) List any right angles.

$\angle MRN$, $\angle MRQ$, $\angle QRP$, $\angle NRP$

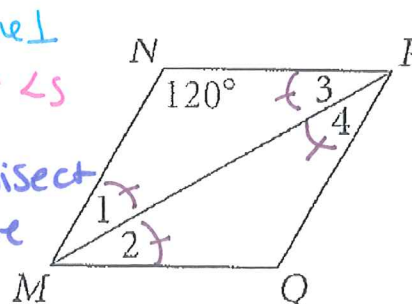
c.) List only angle congruent angles. see the picture

3. In the rhombus, find the measure of each angle



$\angle 1 = 90^\circ$ diags are \perp
 $\angle 2 = 50^\circ$ alt. int \angle s are \cong
 $\angle 3 = 50^\circ$ diags bisect the angle
 $\angle 4 = 40^\circ$ Δ sum

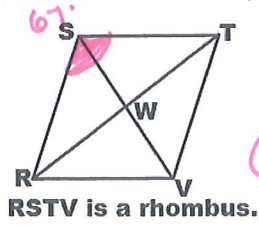
4. In the rhombus, find the measure of each angle



Δ sum + alt int \angle s are \cong + diags bisect the angle
 all \angle s = 30°

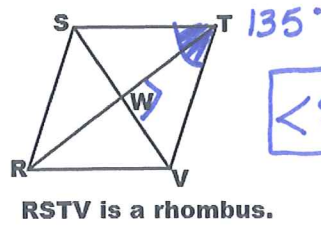
You must state the property you used for EACH answer!

5. If $m\angle RST = 67^\circ$, find $m\angle RSW$.



$\angle RSW = \frac{1}{2} 67$
 $\angle RSW = 33.5^\circ$
 diags bisect the angles

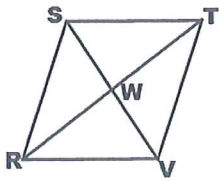
6. Find $m\angle SVT$ if $m\angle STV = 135^\circ$.



$\angle SVT = 22.5^\circ$

Δ sum +
 diags bisect the angles.

7. If $m\angle SWT = (2x + 8)^\circ$, find 'x'.



$\angle SWT = 2x + 8$
 $90 = 2x + 8$
 $-8 = -8$
 $72 = 2x$
 $36 = x$

RSTV is a rhombus.
 diags are \perp

8. If you are given the following information of RSTV, can it be classified as a rhombus? Why or why not?

$ST = 5\sqrt{2}$ units $VT = 5\sqrt{2}$ units

$SR = 5\sqrt{2}$ units $RV = 5\sqrt{2}$ units

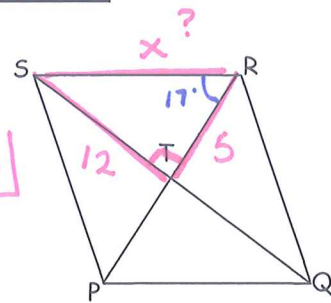
Yes it is a Rhombus by def all 4 sides are \cong

You must state the property you used for EACH answer!

Use rhombus PQRS and the given information to find each value.

9. If $SQ = 24$, $RP = 10$, find SR .

Pyth. thm
 $12^2 + 5^2 = SR^2$
 $\sqrt{169} = \sqrt{SR^2}$
 $SR = 13$



10. If $m\angle PRS = 17$, find $m\angle QRS$.

$17 + 17 = 34^\circ$
 diags bisect the angles.

11. Find $m\angle STR$.

$\angle STR = 90^\circ$ diags are \perp

12. If $SP = 4x - 3$ and $PQ = 18 + x$, find the value of x .

def of Rhombus: parallelogram w/ 4 \cong sides
 $SP \cong PQ$ $4x - 3 = 18 + x$
 $3x = 21$
 $x = 7$

13. Determine whether the figure with vertices $E(-2,-1)$, $F(-4,3)$, $G(1,5)$, $H(3,1)$ is a rhombus.

$FG^2 = 2^2 + 5^2$
 $FG = \sqrt{29}$

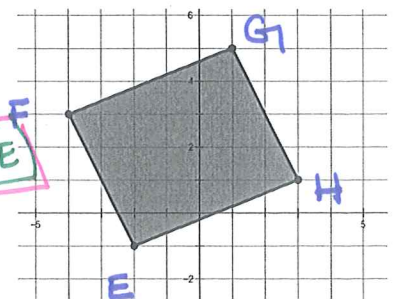
$EH^2 = 5^2 + 2^2$
 $EH = \sqrt{29}$
 $FG \cong EH$

$GH^2 = 2^2 + 4^2$

$GH = 2\sqrt{5}$

$FE^2 = 4^2 + 2^2$

$FE = 2\sqrt{5}$
 $GH \cong FE$



ALL 4 sides are not \cong \therefore It is not a Rhombus by def.