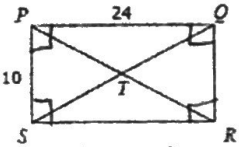
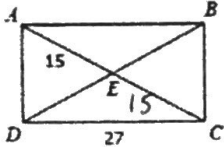
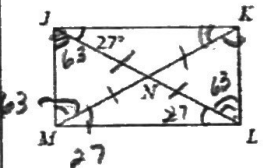
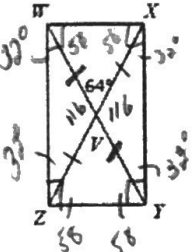


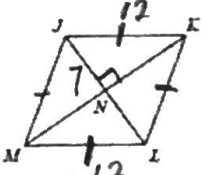
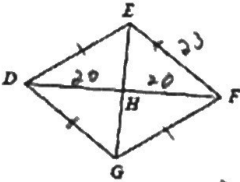
Main Ideas/Questions	Notes
<b>PROPERTIES OF Rectangles</b>  <b>PLUS THESE!</b>	<b>Rectangles have the same properties of parallelograms:</b> <ul style="list-style-type: none"> <li>• Opposite sides are congruent.</li> <li>• Opposite sides are parallel.</li> <li>• Opposite angles are congruent.</li> <li>• Consecutive angles are supplementary.</li> <li>• Diagonals bisect each other.</li> </ul>
	① Four right angles ② Diagonals are congruent

Directions: Each quadrilateral below is a rectangle. Find the missing measures.

1.  $a^2 + b^2 = c^2$ $leg + leg = hyp$ $10^2 + 24^2 = SQ^2$ $SQ = 26$ $PR = 26$ $QR = 10$ $SR = 24$ $QT = 13$	2.  $a^2 + b^2 = c^2$ $x^2 + 27^2 = 30^2$ $x^2 + 729 = 900$ $x^2 = 171$ $x = \sqrt{171}$ $AC = 30$ $BD = 30$ $BE = 15$ $AB = 27$ $BC = \sqrt{171}$
3.  $m\angle MJK = 90^\circ$ $m\angle MJL = 63^\circ$ $m\angle JLK = 63^\circ$ $m\angle KML = 27^\circ$ $m\angle MNL = 126^\circ$ $180 - 27 - 27 = 126$	4.  $m\angle XWY = 58$ $m\angle YXZ = 32$ $m\angle WYZ = 116$ $m\angle XWZ = 90$ $m\angle XZY = 58^\circ$

Main Ideas/Questions	Notes
<b>PROPERTIES OF Rhombi</b>  <b>PLUS THESE!</b>	<b>Rhombi have the same properties of parallelograms:</b> <ul style="list-style-type: none"> <li>• Opposite sides are congruent.</li> <li>• Opposite sides are parallel.</li> <li>• Opposite angles are congruent.</li> <li>• Consecutive angles are supplementary.</li> <li>• Diagonals bisect each other.</li> </ul>
	① Four congruent sides ② diagonals are perpendicular ③ Diagonals bisect opp angles

Directions: Each quadrilateral below is a rhombus. Find the missing measures.

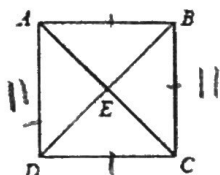
1. $JK = 12$ and $JN = 7$  $x^2 + 7^2 = 12^2$ $x^2 = 144 - 49$ $x^2 = 95$ $x = \sqrt{95} \approx 9.7$ $JM = 12$ $JL = 14$ $MN = 9.7$ $MK = 19.5$	2. $EF = 23$ and $DF = 40$  $x^2 + 20^2 = 23^2$ $x^2 = 129$ $x = \sqrt{129}$ $GF = 23$ $HF = 20$ $GH = \sqrt{129} \approx 11.4$ $GE = \sqrt{22.8}$
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# PROPERTIES OF Squares

A square has ALL the properties of a parallelogram, rectangle, and rhombus!

- Opposite sides are congruent.
- Opposite sides are parallel.
- Opposite angles are congruent.
- Consecutive angles are supplementary.
- Diagonals bisect each other.
- Four right angles.
- Diagonals are congruent.
- Four congruent sides.
- Diagonals are perpendicular.
- Diagonals bisect opposite angles.

6. If  $ABCD$  is a square and  $AD = 11$ , find each missing value.



$$11^2 + 11^2 = AC^2$$

$$242 = AC^2$$

$$\sqrt{242} \approx 15.6$$

$$BC = 11$$

$$AC = 15.6$$

$$BD = 15.6$$

$$EC = 7.8$$

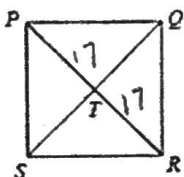
$$m\angle DAB = 90^\circ$$

$$m\angle AEB = 90^\circ$$

$$m\angle CBD = 45^\circ$$

$$m\angle BAC = 45^\circ$$

7. If  $PQRS$  is a square and  $TR = 17$ , find each missing value.



$$17^2 + 17^2 = PQ^2$$

$$578 = PQ^2$$

$$\sqrt{578} = PQ$$

$$PR = 34$$

$$QS = 34$$

$$QT = 17$$

$$PQ = 24$$

$$m\angle PRS = 45^\circ$$

$$m\angle STR = 90^\circ$$

$$m\angle PSR = 90^\circ$$

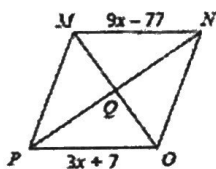
$$m\angle QPR = 45^\circ$$

8. If  $MNOP$  is a rhombus, find  $MP$ .

$$9x - 77 = 3x + 7$$

$$6x = 84$$

$$x = 14$$



$$9(14) - 77 = 49$$

all sides  $\cong$  in rhombus

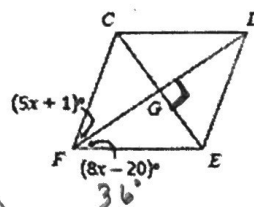
9. If  $CDEF$  is a rhombus, find  $m\angle FED$ .

$$5x + 1 = 8x - 20$$

$$21 = 3x$$

$$x = 7$$

$$8(7) - 20 = 36$$



$$90 + 36 + x = 180$$

$$x = 108^\circ$$

## Always, Sometimes, Never

Directions: Determine whether the following statements are always, sometimes, or never true.

- A kite is a quadrilateral. *Always*
- A trapezoid is a parallelogram. *Never*
- A square is a rectangle. *Always*
- A rectangle is a square. *Sometimes*
- A parallelogram is a rhombus. *Sometimes*
- A rhombus is a quadrilateral. *Always*

