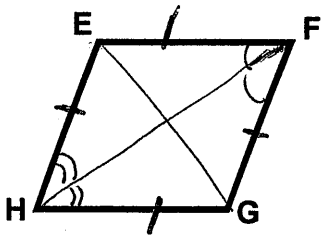
Name: _____ Date: Key (5)
Period: _____

Essential Question: What are the similarities and differences between the special quadrilaterals?

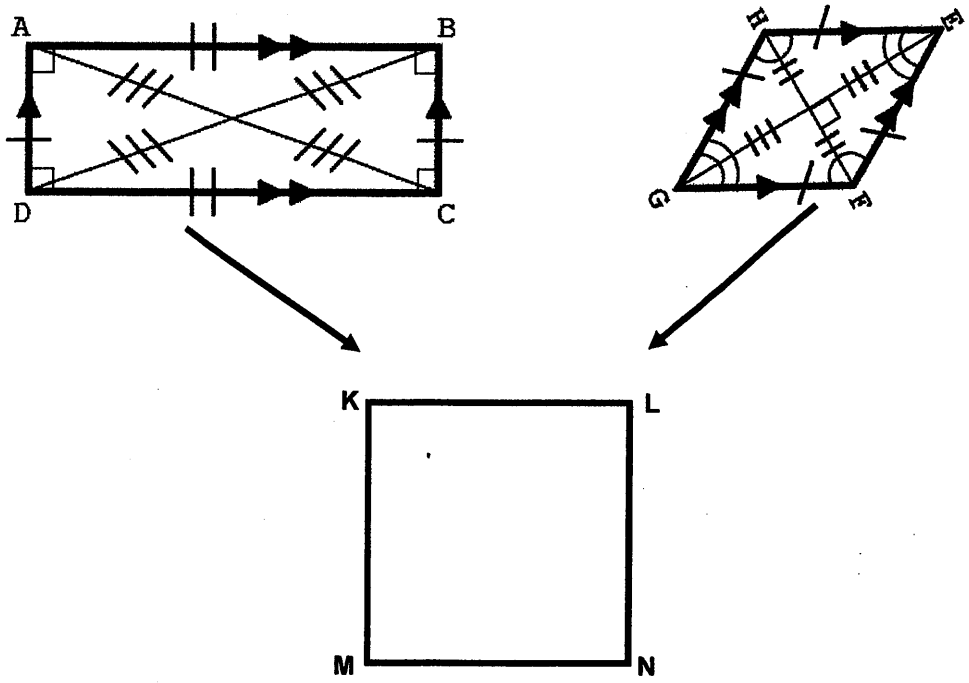
Each of these shapes is a parallelogram, so they each have the properties of parallelograms (listed below), plus more of their own.

Theorems about Rhombuses (use Rhombus EFGH below to fill in the blanks):

1. A parallelogram is a rhombus if and only if its diagonals are perpendicular.
   $\overline{HF} \perp \overline{EG}$
2. A parallelogram is a rhombus if and only if each diagonal bisects a pair of opposite angles.
   $\overline{EG}$ bisects ∠HEF and ∠HGF, so ∠HEG ≅ ∠FEG and ∠HGE ≅ ∠FGE
   $\overline{FH}$ bisects ∠EFG and ∠EHG, so ∠EHF ≅ ∠FHG and ∠EFH ≅ ∠GFH
3. All four sides are equal.



There are no theorems specific to the square. It is special because it has all of the properties of the rectangle **and** rhombus.



Name: _____ Date: _____
Period: _____

Example 1: Decide whether the statement is *always*, *sometimes*, or *never* true.

a. A rectangle is a square.

Sometimes never

b. A square is a parallelogram.

always

c. A quadrilateral is a rhombus.

sometimes

d. A square is a rectangle.

always

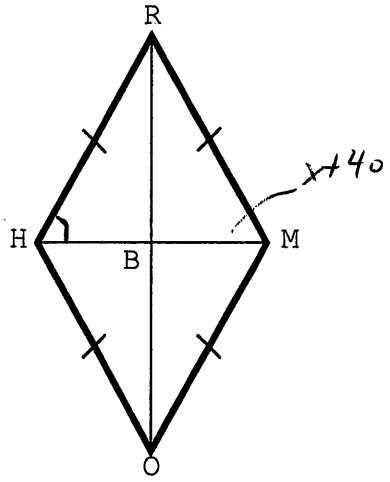
Example 2: Solve for x using the figure to the right.

a. m∠RBH = 8x – 6

$8x-6=90$

$8x=96$

$x=12$



b. m∠RHM = x + 40 and m∠MRH = 2x

$2x+80+2x=180$

$4x+80=180$

$4x=100$

$x=25$

c. If m∠HOB = 24°, find m∠MOB.

24°

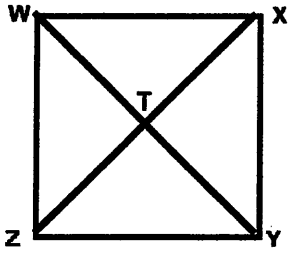
d. If RB = 6, find RO.

12

Example 3: WXYZ is a square. If WT is 3, find each measure.

a. ZX 6

b. WX $3\sqrt{2}$



c. ∠WZY 90°

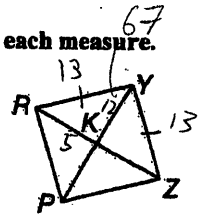
d. ∠XYT 45°

e. ∠ZTY 90°

NAME _____ DATE _____ PERIOD _____ (5)

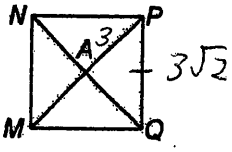
6-5 Practice
Rhombi and Squares

***PRYZ* is a rhombus. If *RK* = 5, *RY* = 13 and *m∠YRZ* = 67, find each measure.**



1. *KY* 12
2. *PK* 5
3. *m∠YKZ* 90°
4. *m∠PZR* 45°

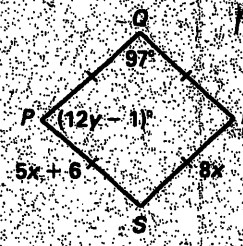
***MNPQ* is a rhombus. If *PQ* = $3\sqrt{2}$ and *AP* = 3, find each measure.**



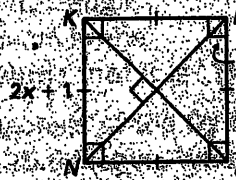
5. *AQ* 3
6. *m∠APQ* 45°
7. *m∠MNP* 90°
8. *PM* $3\sqrt{2}$

Classify the special quadrilateral. *Explain* your reasoning. Then find the values of *x* and *y*.

11. rhombus



12. square



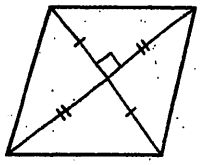
$8x = 5x + 6$
$3x = 6$
$x = 2$

$12y - 1 + 97 = 180$
$12y + 96 = 180$

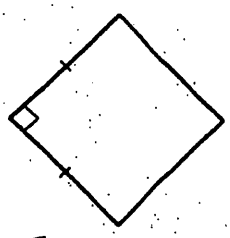
$4x - 7 = 2x + 1$
$2x = 8$
$x = 4$

$7y + 3 = 45$
$7y = 42$
$y = 6$

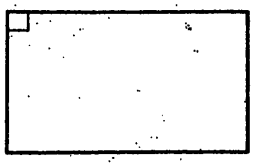
Classify the parallelogram. *Explain* your reasoning.

5. 

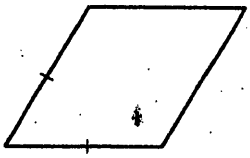
rhombus

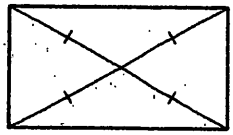
6. 

square

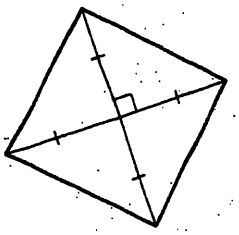
7. 

rectangle

8. 

9. 

rectangle

10. 

$$\begin{bmatrix} 15 & 3 \\ +11 & 6 \end{bmatrix}$$

$$\begin{bmatrix} M & 4 & -3 \\ +11 & & 6 \\ -7 & -9 & \end{bmatrix}$$

Geometry Name Key ID: 1

Quadrilaterals Quiz Review #2

Date _____ Period ____

Find the midpoint of the line segment with the given endpoints.

1) $(-7, 9)$, $(8, -6)$

$\left(\frac{1}{2}, 1\frac{1}{2}\right)$

$x_1\ y_1\ x_2\ y_2$

$\frac{-7+8}{2}, \frac{9-6}{2}$

$M\left(\frac{1}{2}, 3/2\right)$

Find the other endpoint of the line segment with the given endpoint and midpoint.

2) Endpoint: $(-7, -9)$, midpoint: $(4, -3)$

$(15, 3)$

$+11\left[\begin{matrix}15 & 3\end{matrix}\right]+6$

$M\left[\begin{matrix}4 & -3\end{matrix}\right]$

$+11\left[\begin{matrix}-7 & -9\end{matrix}\right]+6$

$E(15, 3)$

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

3) $(7.4, -1.9)$, $(-7.9, -3.4)$

15.4

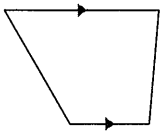
$x_1\ y_1\ x_2\ y_2$

$d^2 = (-7.9 - 7.4)^2 + (-3.4 + 1.9)^2$

$d = 15.4$

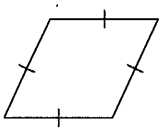
State the most specific name for each figure.

4)



trapezoid

5)



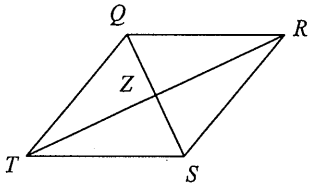
rhombus

Solve for *x*. Each figure is a parallelogram.

6) $ZT = 21$

$RT = 7x - 7$

$2(21) = 7x - 7$

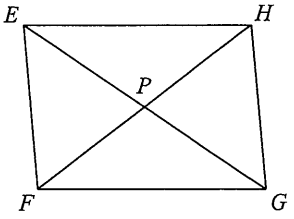


7

7) $GP = 1 + 3x$

$PE = 4x - 1$

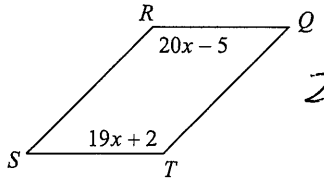
$4x - 1 = 1 + 3x$



2

Find the measurement indicated in each parallelogram.

8) Find $m\angle R$



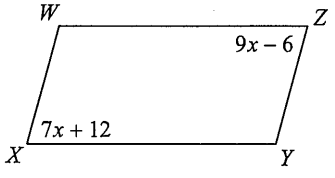
135°

$20x - 5 = 19x + 2$

$1x = 7$

$m\angle R = 20(7) - 5$

9) Find $m\angle X$



75°

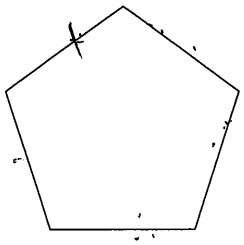
$9x - 6 = 7x + 12$

$2x = 18$

$x = 9$

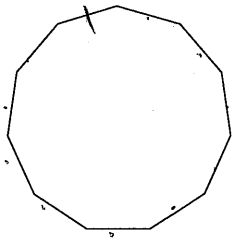
Find the measure of one interior angle in each polygon. Round your answer to the nearest tenth if necessary.

10) $n=5$ $\text{Angle} = \frac{180(5-2)}{5}$



108°

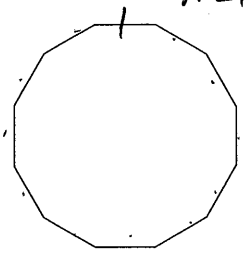
11) $n=11$



147.3°

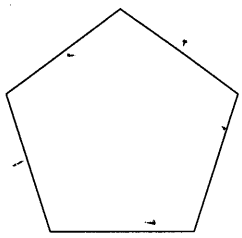
Find the measure of one exterior angle in each polygon. Round your answer to the nearest tenth if necessary.

12) $n=12$



30°

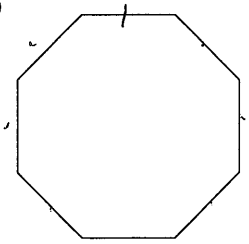
13) $n=5$



72°

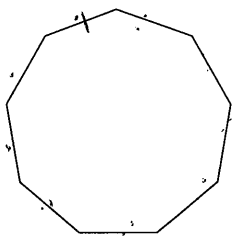
Find the interior angle sum for each polygon. Round your answer to the nearest tenth if necessary.

14) $n=8$



1080°

15) $n=9$



1260°