

Geometry, Periods 1 & 6 – Work for March 16-27 – Dr. Sargent

I had hoped to use ALEKS for our work while away, but found that I could not quite get it to do exactly what I wished to cover, so I am placing most of the work online in PDF format, with an occasional trip to ALEKS for practice.

Days 1 & 2

We are continuing to learn the shapes and characteristics of various quadrilaterals. We have begun working on learning the characteristics of rectangles. As a refresher, a rectangle is a special kind of parallelogram, so all the characteristics of a parallelogram apply:

- 1) Opposite sides are parallel
- 2) Opposite sides are congruent
- 3) Opposite angles are congruent
- 4) Consecutive angles are supplementary
- 5) Diagonals bisect each other.

To these five characteristics, we add two characteristics of rectangles:

- 1) All angles are right angles (90°)
- 2) Diagonals are congruent

I would like you to gain some practice working with rectangles, I am making available two ways to do this: 1) Homework 1-Rectangles, is assigned on ALEKS. (For those of you doing the work with pencil and paper, a copy is attached), and 2) A copy of Unit 7 Homework 3 is available online (or included in this packet, if you are receiving the pencil and paper copies). (I understand that Period 1 may already have this homework, but just in case you did not take it home, I am providing another copy online or with the packet)

The problem with those doing everything with pencil and paper is that you will have no idea whether your answers are right or wrong, so you cannot check your work. Therefore, I am including the answers for the odd-numbered problems at the end of these instructions. Please try and work the problems on your own before looking at the answers. To do otherwise is to cheat yourself of the opportunity to practice and gain mastery, and this will show when you are tested on the material. Please submit this homework (odd and even problems) when you have completed it. (If you are working online and have no printer, you can submit answers via message on Live Grades, or write them on a sheet of paper and return it. Make sure you clearly label what you are returning (ie, Unit 7, Homework 3) and make it neat enough I can read it.

Day 3

The next quadrilateral we will be examining is called a rhombus (plural: rhombi). A rhombus is also a special kind of parallelogram, so the five characteristics of a parallelogram continue to apply. In addition, a rhombus has the following characteristics:

- 1) All four sides are congruent
- 2) Diagonals are perpendicular to each other
- 3) Diagonals bisect opposite angles

I am attaching (or making available online) a copy of a one-page worksheet on rhombi. In addition, there is a short homework assignment on ALEKS called Homework 2 – Rhombi, available for you. You need not submit this work back to me.

Days 4 & 5

The fourth quadrilateral we will learn about is the Square. Its characteristics are a combination of ALL the characteristics of the parallelogram, the rectangle, and the rhombus.

I am attaching and making available online a copy of a worksheet involving squares and their properties. This is your work for day 4. This work does not need to be submitted back to me at all.

For day 5, I am attaching or placing online a copy of Unit 7, Homework 4, which includes problems on rhombi and squares. As before, answers are at the end of these instructions for the odd-numbered problems, but please do not look at the answers until you have at least tried to work the problems. This homework should be submitted back to me when completed.

Days 6 - 8

Once we have in our minds the characteristics of the various quadrilaterals we have so far studied (parallelograms, rectangles, rhombi and squares), we will now learn to identify these when given the coordinates of their vertices on the coordinate plane (on a graph).

There are two steps to doing this. We must first check to see if the opposite sides are all the same or not. Then we need to check if the diagonals are congruent. To check for congruency, we must use the distance formula for each side and then for the diagonals. [Distance formula: $d =$

$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$]. There are four possibilities:

- 1) If opposite sides are congruent and diagonals are not congruent, then the figure is a parallelogram;
- 2) If opposite sides are congruent and diagonals are congruent, then the figure is a rectangle;
- 3) If all four sides are congruent and the diagonals are not congruent, then the figure is a rhombus;
- 4) If all four sides are congruent and the diagonals are congruent, then the figure is a square;.

For Day 6, I am attaching and making available online a three-page practice sheet entitled “Coordinate Geometry: Name That Quadrilateral.” Please complete this to gain practice. It does not need to be returned to me.

For Day 7, I am attaching and making available online a copy of a one-page worksheet entitled "Quadrilaterals on the coordinate plane." For your completion. This will give you practice using both the distance and slope formulae. Just as a reminder, the slope formula is: $m = \frac{y_2 - y_1}{x_2 - x_1}$ You will not need to return this paper to me.

For Day 8, I am attaching or placing online a copy of Unit 7 Homework 5 which provides practice in classifying quadrilaterals on the coordinate plane. Answers to the odd numbered problems are once again provided, but please try to do this on your own first. This should be submitted to me when completed.

Day 9 & 10

Please complete Quiz 7-2 and return to me. Please be honest and do your own work.

ALEKS TOPICS – Please note that your regular assignment of 12 topics per week continues. The week of Spring Break, March 30-Apr 5, is a bonus week of topics.

Selected answers to odd-numbered problems in assignments and worksheets:

Days 1 & 2 - Homework 1, Rectangles (ALEKS) –

Question 1: $FI = 18$; $m\angle IGF = 37^\circ$

Question 2: $BE = 18$; $m\angle EDC = 32^\circ$

Question 3: $AC = 34$; $m\angle EBC = 40^\circ$

Question 4: $EG = 32$; $m\angle IEH = 51^\circ$

Question 5: $JL = 34$; $m\angle NML = 41^\circ$

Unit 7, Homework 3 – odd numbered questions

Problem 1: $VW = 31$; $WX = 19$; $YW = 36.4$; $ZX = 18.2$; $VX = 36.4$

Problem 3: $m\angle 1 = 59^\circ$; $m\angle 2 = 31^\circ$; $m\angle 3 = 59^\circ$; $m\angle 4 = 31^\circ$; $m\angle 5 = 31^\circ$; $m\angle 6 = 59^\circ$;
 $m\angle 7 = 118^\circ$; $m\angle 8 = 62^\circ$; $m\angle 9 = 62^\circ$; $m\angle 10 = 118^\circ$; $m\angle 11 = 31^\circ$

Problem 5: $m\angle JMK = 54^\circ$; $m\angle JKH = 63^\circ$; $m\angle HLK = 90^\circ$; $m\angle HJL = 27^\circ$; $m\angle LHK = 63^\circ$;
 $m\angle JLK = 27^\circ$

Problem 7: $PR = 73$

Problem 9: $PN = 64$

Problem 11: $m\angle GJK = 22^\circ$

Problem 13: $m\angle VWZ = 27^\circ$

Day 3 – Homework 2 – Rhombi (ALEKS)

Question 1: $m\angle 1 = 36^\circ$; $m\angle 2 = 54^\circ$; $m\angle 3 = 54^\circ$; $m\angle 4 = 54^\circ$;

Question 2: $m\angle 1 = 33^\circ$; $m\angle 2 = 57^\circ$; $m\angle 3 = 57^\circ$; $m\angle 4 = 33^\circ$

Question 3: $m\angle 1 = 92^\circ$; $m\angle 2 = 44^\circ$; $m\angle 3 = 92^\circ$; $m\angle 4 = 44^\circ$;

Question 4: $m\angle 1 = 51^\circ$; $m\angle 2 = 51^\circ$; $m\angle 3 = 39^\circ$; $m\angle 4 = 51^\circ$;

Question 5: $m\angle 1 = 56^\circ$; $m\angle 2 = 56^\circ$; $m\angle 3 = 34^\circ$; $m\angle 4 = 34^\circ$;

Worksheet on Rhombi – odd-numbered questions

Question 1: $JM = 12$; $JL = 14$; $MN = 9.7$ (use Pythagorean theorem); $MK = 19.4$

Question 3: $VT = 11$; $UV = 9$; $RS = 14.2$; $ST = 14.2$

Question 5: $WZ = 34$; $VY = 19$; $ZV = 28.2$; $ZX = 56.4$; $m\angle WXZ = 34^\circ$; $m\angle WVZ = 90^\circ$; $m\angle ZYW = 56^\circ$; $m\angle XYW = 56^\circ$

Days 4 & 5 – Worksheet on Squares

Question 7: $PR = 34$; $QS = 34$; $QT = 17$; $PQ = 24$; $m\angle PRS = 45^\circ$; $m\angle STR = 90^\circ$; $m\angle PSR = 90^\circ$; $m\angle QPR = 45^\circ$

Question 9: $m\angle FED = 108^\circ$

Question 11: $VT = 62$

Unit 7 Homework 4

Question 1: $TU = 8$; $WU = 10$; $TX = 6.2$; $TV = 12.4$

Question 3: $NK = 12$; $NL = 10$; $ML = 15.6$; $JM = 15.6$; $m\angle KNL = 90^\circ$; $m\angle KJL = 50^\circ$; $m\angle MLK = 100^\circ$; $m\angle JKM = 40^\circ$; $m\angle JML = 80^\circ$

Question 5: $m\angle HGI = 35^\circ$

Question 7: $X = 3$

Question 9: $VU = 15$; $SU = 21.2$; $TV = 21.2$; $SW = 10.6$

Question 11: $m\angle EFG = 90^\circ$; $m\angle GDH = 45^\circ$; $m\angle FEG = 45^\circ$; $m\angle DHG = 90^\circ$

Question 13: Rectangles and Squares

Question 15: Rhombi and Squares

Days 6-8 – Coordinate Geometry: Name That Quadrilateral

Question 1: $AB = \sqrt{5}$; $CD = \sqrt{5}$; $BC = \sqrt{45}$; $AD = \sqrt{45}$; Therefore it is either a parallelogram or a rectangle, so checking diagonals: $AC = \sqrt{50}$; $BD = \sqrt{50}$; Therefore it is a Rectangle

Question 3: $JK = \sqrt{18}$; $LM = \sqrt{18}$; $KL = \sqrt{73}$; $JM = \sqrt{73}$; therefore, it is either a parallelogram or a rectangle, so check diagonals to find out which: $\sqrt{157}$; $KM = \sqrt{25}$; Therefore it is a parallelogram.

Question 5: $DE = \sqrt{13}$; $FG = \sqrt{13}$; $EF = \sqrt{73}$; $DG = \sqrt{73}$ Therefore it is either a parallelogram or a rectangle, so check diagonals to discover which: $DF = \sqrt{122}$; $EG = \sqrt{50}$; Therefore, it is a parallelogram.

Quadrilaterals in the Coordinate Plane

Question 1: $m \overline{QR} = \frac{3}{2}$

Question 3: $m \overline{XZ} = \text{undefined}$

Question 5: $VU = \sqrt{85}$

Question 7: $GE = \sqrt{74}$

Unit 7 Homework 5

Question 1: $ST = \sqrt{116}$; $UV = \sqrt{116}$; $TU = \sqrt{116}$; $SV = \sqrt{116}$ – Therefore, this is a rhombus or a square; Checking diagonals: $SU = \sqrt{232}$; $TV = \sqrt{232}$ – Therefore, the figure is a square

Question 3: $AB = \sqrt{45}$; $CD = \sqrt{45}$; $BC = \sqrt{245}$; $AD = \sqrt{245}$ – therefore, this is a parallelogram or a rectangle; Checking diagonals: $AC = \sqrt{290}$; $BD = \sqrt{290}$ – therefore this figure is a rectangle

Days 9-10 - sorry, no help on the quiz!

Name: _____

Unit 7: Polygons & Quadrilaterals



Date: _____ Bell: _____

Homework 3: Rectangles

**** This is a 2-page document! ****

Directions: If each quadrilateral below is a rectangle, find the missing measures.

1.

$VW =$ _____
 $WX =$ _____
 $YW =$ _____
 $ZX =$ _____
 $VX =$ _____

2.

$GF =$ _____
 $GE =$ _____
 $DF =$ _____
 $HF =$ _____
 $DG =$ _____

* $GH = 14$

3.

$m\angle 1 =$ _____ $m\angle 5 =$ _____ $m\angle 9 =$ _____
 $m\angle 2 =$ _____ $m\angle 6 =$ _____ $m\angle 10 =$ _____
 $m\angle 3 =$ _____ $m\angle 7 =$ _____ $m\angle 11 =$ _____
 $m\angle 4 =$ _____ $m\angle 8 =$ _____

4.

$m\angle BCD =$ _____ $m\angle ADE =$ _____
 $m\angle ABD =$ _____ $m\angle AEB =$ _____
 $m\angle CBE =$ _____ $m\angle DEA =$ _____

5.

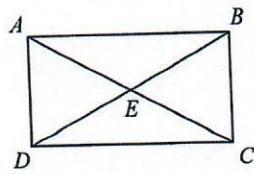
$m\angle JMK =$ _____ $m\angle HJL =$ _____
 $m\angle JKH =$ _____ $m\angle LHK =$ _____
 $m\angle HLK =$ _____ $m\angle JLK =$ _____

6. Find WZ .

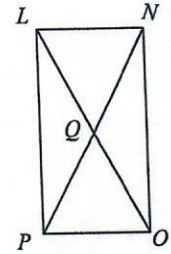
$WZ = 7x - 6$ $XY = 3x + 14$

7. If $SQ = 11x - 26$ and $PR = 5x + 28$, find PR .

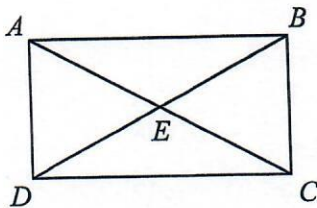
8. If $AE = 6x - 55$ and $EC = 3x - 16$, find DB .



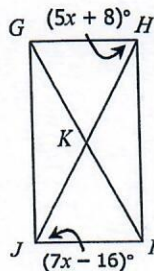
9. If $LO = 15x + 19$ and $QN = 10x + 2$, find PN .



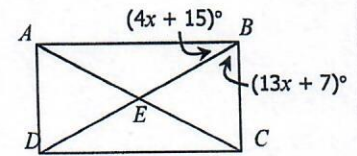
10. If $DE = 4x + 1$, $EB = 12x - 31$, and $CD = 28$, find AD .



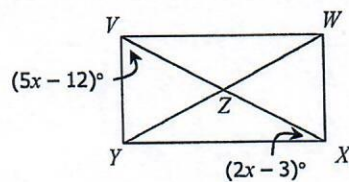
11. Find $m\angle GJK$.



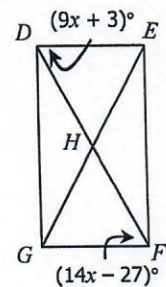
12. Find $m\angle ADE$.



13. Find $m\angle VWZ$.



14. Find $m\angle DHG$.



Name: _____

Class: _____

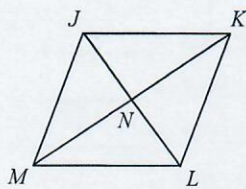
Topic: _____

Date: _____

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

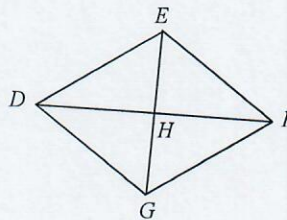
Directions: Each quadrilateral below is a rhombus. Find the missing measures.

1. $JK = 12$ and $JN = 7$



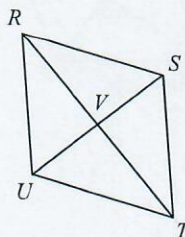
$JM =$ _____
 $JL =$ _____
 $MN =$ _____
 $MK =$ _____

2. $EF = 23$ and $DF = 40$



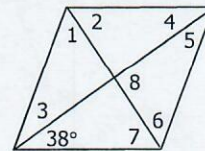
$GF =$ _____
 $HF =$ _____
 $GH =$ _____
 $GE =$ _____

3. $RT = 22$ and $US = 18$



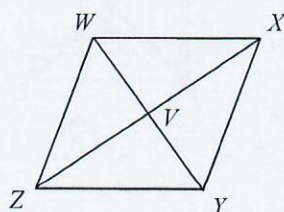
$VT =$ _____
 $UV =$ _____
 $RS =$ _____
 $ST =$ _____

4.



$m\angle 1 =$ _____ $m\angle 5 =$ _____
 $m\angle 2 =$ _____ $m\angle 6 =$ _____
 $m\angle 3 =$ _____ $m\angle 7 =$ _____
 $m\angle 4 =$ _____ $m\angle 8 =$ _____

5. $ZY = 34$, $WY = 38$, and $m\angle ZXY = 34^\circ$.



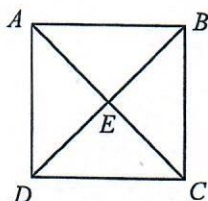
$WZ =$ _____ $m\angle WXZ =$ _____
 $VY =$ _____ $m\angle WVZ =$ _____
 $ZV =$ _____ $m\angle ZYW =$ _____
 $ZX =$ _____ $m\angle XYW =$ _____

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.



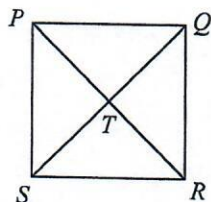
$$BC = \underline{\hspace{2cm}} \quad m\angle DAB = \underline{\hspace{2cm}}$$

$$AC = \underline{\hspace{2cm}} \quad m\angle AEB = \underline{\hspace{2cm}}$$

$$BD = \underline{\hspace{2cm}} \quad m\angle CBD = \underline{\hspace{2cm}}$$

$$EC = \underline{\hspace{2cm}} \quad m\angle BAC = \underline{\hspace{2cm}}$$

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



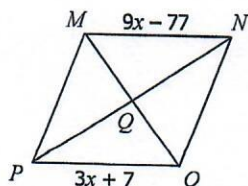
$$PR = \underline{\hspace{2cm}} \quad m\angle PRS = \underline{\hspace{2cm}}$$

$$QS = \underline{\hspace{2cm}} \quad m\angle STR = \underline{\hspace{2cm}}$$

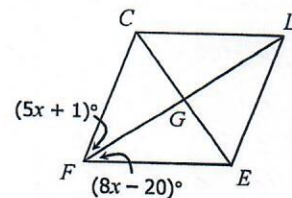
$$QT = \underline{\hspace{2cm}} \quad m\angle PSR = \underline{\hspace{2cm}}$$

$$PQ = \underline{\hspace{2cm}} \quad m\angle QPR = \underline{\hspace{2cm}}$$

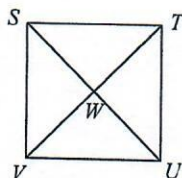
8. If $MNOP$ is a rhombus, find MP .



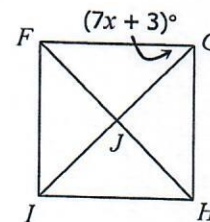
9. If $CDEF$ is a rhombus, find $m\angle FED$.



10. If $STUV$ is a square with $SW = 2x + 13$ and $WU = 8x - 41$, find VT .



11. If $FGHI$ is a square, solve for x .



Name: _____

Unit 7: Polygons & Quadrilaterals



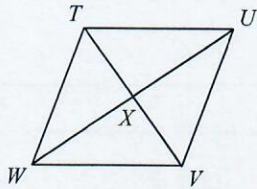
Date: _____ Bell: _____

Homework 4: Rhombi and Squares

** This is a 2-page document! **

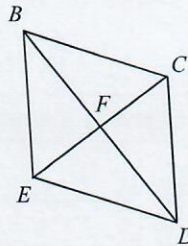
Directions: If each quadrilateral below is a rhombus, find the missing measures.

1. $UV = 8$ and $WX = 5$



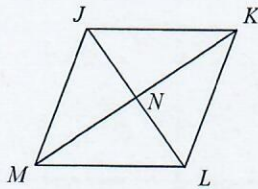
$TU =$ _____
 $WU =$ _____
 $TX =$ _____
 $TV =$ _____

2. $BC = 28$ and $BD = 32$



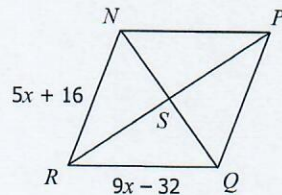
$CD =$ _____
 $FD =$ _____
 $EF =$ _____
 $EC =$ _____

3. $MK = 24$, $JL = 20$, and $m\angle MJL = 50^\circ$

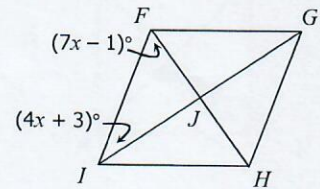


$NK =$ _____ $m\angle KNL =$ _____
 $NL =$ _____ $m\angle KJL =$ _____
 $ML =$ _____ $m\angle MLK =$ _____
 $JM =$ _____ $m\angle JKM =$ _____
 $m\angle JML =$ _____

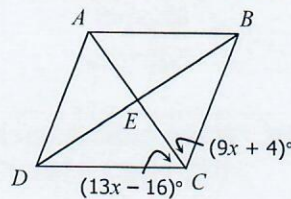
4. Find PQ .



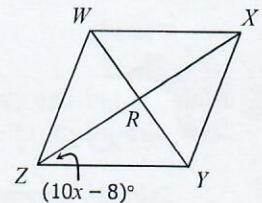
5. Find $m\angle HGI$.



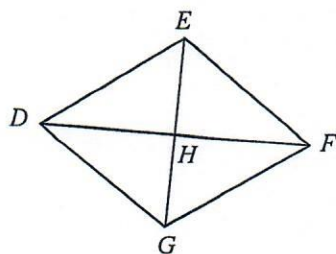
6. Find $m\angle ADB$.



7. If $m\angle XYZ = 136^\circ$, solve for x .

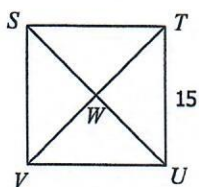


8. If $DE = 16x - 3$, $EF = 9x + 11$, and $DF = 52$, find HG .



Directions: If each quadrilateral below is a square, find the missing measures.

9.



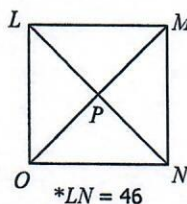
$VU =$ _____

$SU =$ _____

$TV =$ _____

$SW =$ _____

10.



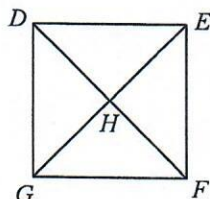
$OM =$ _____

$PN =$ _____

$ON =$ _____

$MN =$ _____

11.



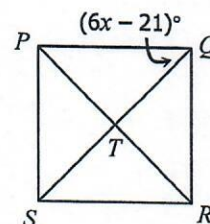
$m\angle EFG =$ _____

$m\angle GDH =$ _____

$m\angle FEG =$ _____

$m\angle DHG =$ _____

12. Solve for x .



13. Which quadrilaterals always have diagonals that are congruent?

- Parallelograms
- Rectangles
- Rhombi
- Squares

14. Which quadrilaterals always have consecutive angles that are supplementary?

- Parallelograms
- Rectangles
- Rhombi
- Squares

15. Which quadrilaterals always have diagonals that are perpendicular?

- Parallelograms
- Rectangles
- Rhombi
- Squares

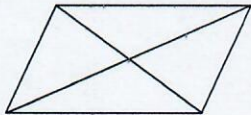
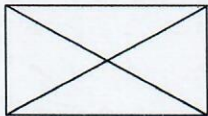
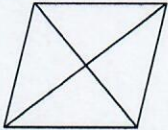
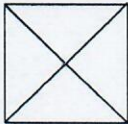
16. Which quadrilaterals always have diagonals that bisect each other?

- Parallelograms
- Rectangles
- Rhombi
- Squares

coordinate geometry: Name that Quadrilateral!

To classify a quadrilateral as a parallelogram, rectangle, rhombus, or square, use the following steps:

- ✓ Step 1: Check congruency of _____.
- ✓ Step 2: Check congruency of _____.

CASE 1 (Parallelogram)	Opposite sides are congruent and diagonals are NOT congruent.	
CASE 2 (Rectangle)	Opposite sides are congruent and diagonals are congruent.	
CASE 3 (Rhombus)	All four sides are congruent and diagonals are NOT congruent.	
CASE 4 (Square)	All four sides are congruent and diagonals are congruent.	

Practice! Given the vertices, determine the quadrilaterals most specific classification.

- ① $A(9, -4), B(8, -2), C(2, -5), D(3, -7)$

$ABCD$ is a _____.

2 $Q(-2, -7), R(1, -5), S(4, -7), T(1, -9)$

$QRST$ is a _____.

3 $J(5, -1), K(8, 2), L(11, 10), M(8, 7)$

$JKLM$ is a _____.

4 $W(-4, -3), X(1, -2), Y(2, -7), Z(-3, -8)$

$WXYZ$ is a _____.

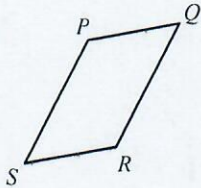
5 $D(-5, 9), E(-3, 6), F(-6, -2), G(-8, 1)$

$DEFG$ is a _____.

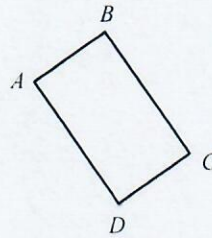
QUADRILATERALS *in the* COORDINATE PLANE

Directions: Use your knowledge of slope, distance, midpoint, and the properties of quadrilaterals to answer the following questions.

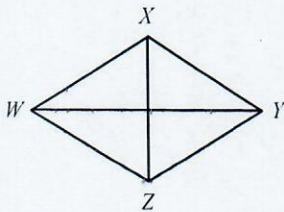
1. On parallelogram $PQRS$ below, if P is located at $(-1, 6)$ and S is located at $(-7, -3)$, what is the slope of \overline{QR} ?



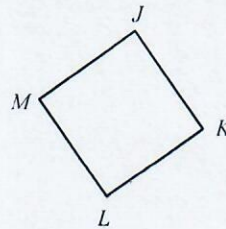
2. On rectangle $ABCD$ below, if A is located at $(3, 4)$ and B is located at $(7, 6)$, is the slope of \overline{BC} ?



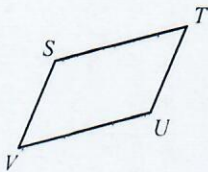
3. On rhombus $WXYZ$, if W is located at $(-5, -2)$ and Y is located at $(3, -2)$, what is the slope of \overline{XZ} ?



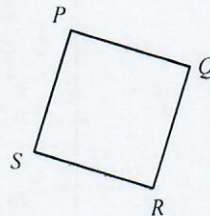
4. On square $JKLM$ below, if J is located at $(-2, 5)$ and K is located at $(2, 2)$, what is the slope of \overline{LK} ?



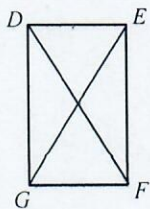
5. On parallelogram $STUV$ below, if S is located at $(-4, 1)$ and T is located at $(5, 3)$, what is the length of \overline{VU} ?



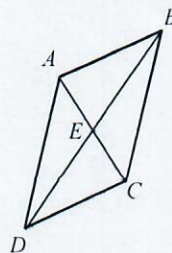
6. On square $PQRS$ below, if Q is located at $(7, 0)$ and R is located at $(5, -8)$, what is the length of \overline{SR} ?



7. On rectangle $DEFG$ below, if D is located at $(-1, -1)$ and F is located at $(4, -8)$, what is the length of \overline{GE} ?



8. On parallelogram $ABCD$ below, if $A(1, 1)$, $B(8, 5)$, $C(5, -5)$ and $D(-2, -9)$, what are the coordinates of point E ?



Name: _____

Unit 7: Polygons & Quadrilaterals



Date: _____ Bell: _____

Homework 5: Classifying Quadrilaterals
in the Coordinate Plane

**** This is a 2-page document! ****

Directions: Given the vertices, determine the quadrilaterals most specific classification: Parallelogram, Rectangle, Rhombus, or Square. Justify your answer using the distance formula.

1. $S(-9, 14)$, $T(1, 10)$, $U(-3, 0)$, $V(-13, 4)$

$STUV$ is a _____.

2. $E(-7, -4)$, $F(2, -3)$, $G(0, -7)$, $H(-9, -8)$

$EFGH$ is a _____.

3. $A(-5, 8), B(-2, 14), C(12, 7), D(9, 1)$

$ABCD$ is a _____.

4. $K(5, -3), L(7, 1), M(9, -3), N(7, -7)$

$KLMN$ is a _____.

Name: _____

Geometry

Date: _____ Per: _____

Unit 7: Polygons & Quadrilaterals

Quiz 7-2: Parallelograms, Rectangles, Rhombi & Squares

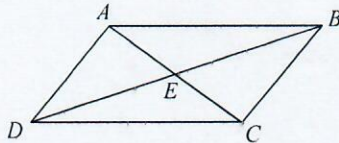
1. Which quadrilaterals always have opposite angles that are congruent?

- Parallelograms
- Rectangles
- Rhombi
- Squares

2. Which quadrilaterals always have diagonals that bisect opposite angles?

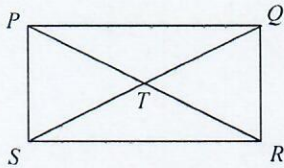
- Parallelograms
- Rectangles
- Rhombi
- Squares

3. If $ABCD$ is a parallelogram, $AD = 14$, $EC = 11$, $m\angle ABC = 64^\circ$, $m\angle DAC = 71^\circ$, and $m\angle BDC = 25^\circ$, find each measure.



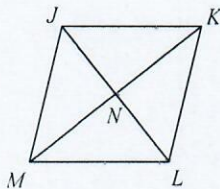
- a) $BC =$ _____
- b) $AC =$ _____
- c) $m\angle DAB =$ _____
- d) $m\angle ABD =$ _____
- e) $m\angle ACD =$ _____
- f) $m\angle ADB =$ _____

4. If $PQRS$ is a rectangle, $ST = 12$, and $m\angle PRS = 23^\circ$, find each measure.



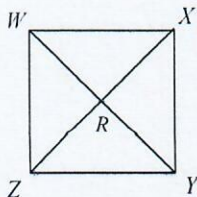
- a) $SQ =$ _____
- b) $PR =$ _____
- c) $m\angle QPR =$ _____
- d) $m\angle PSR =$ _____
- e) $m\angle SQR =$ _____
- f) $m\angle PTQ =$ _____

5. If $JKLM$ is a rhombus, $MK = 30$, $NL = 13$, and $m\angle MKL = 41^\circ$, find each measure.



- a) $NK =$ _____
- b) $JL =$ _____
- c) $KL =$ _____
- d) $m\angle JKM =$ _____
- e) $m\angle JML =$ _____
- f) $m\angle MLK =$ _____
- g) $m\angle MNL =$ _____
- h) $m\angle KJL =$ _____

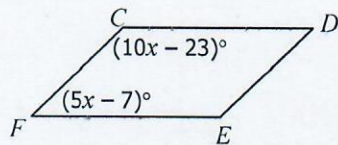
6. If $WXYZ$ is a square with $WZ = 27$, find each measure.



- a) $ZY =$ _____
- b) $WY =$ _____
- c) $RX =$ _____
- d) $m\angle WRZ =$ _____
- e) $m\angle XYZ =$ _____
- f) $m\angle ZWY =$ _____

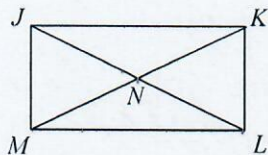
7. If $CDEF$ is a parallelogram, find $m\angle FCD$.

7. _____



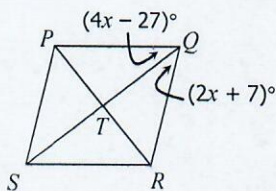
8. If $JKLM$ is a rectangle, $JL = 2x + 5$, and $MK = 7x - 40$, find MK .

8. _____



9. If $PQRS$ is a rhombus, find $m\angle PQR$.

9. _____



10. Quadrilateral $BCDE$ has vertices $B(-1, -1)$, $C(6, -2)$, $D(5, -9)$, and $E(-2, -8)$. Determine the most precise classification of $BCDE$: a parallelogram, rectangle, rhombus, or square. Use the distance formula to justify your answer.

10. $BCDE$ is a _____