Name: AK Period: _____ Date: _____

Unit 7 Review

1. Fill out the Venn Diagram. If a region lies inside another region then all properties and definitions of the larger region apply to the smaller region inside. (ex: all properties for a rectangle, rhombus, parallelogram and quadrilateral apply to a square).

Quadrilateral

Definition: Polygons with 4 sides

Parallelogram

Definition: opp sides are ||

Property: opp sides ≅

Property: opp ∠ ≅

Property: cons. ∠ supplementary

Property: Diags bisect

Rhombus

Def: equilateral p-gram

Property: diags ⊥

Property: diags bisect angles

Square

Def: Regular p-gram

Rectangle

Def: Equiangular p-gram

Property: diags ≅

Trapezoid

Definition: one pair || sides

Property: Consecutive angles are supplementary

Isosceles Trapezoid

Definition: Trap w/ ≅ legs

Property: ≅ diags

Property: ≅ base angles

Kite

Definition: consecutive sides are ≅ (quadrilaterals)

Property: One pair of ≅ angles

Property: perpendicular diags

2. Fill in the blanks with always, sometimes and never.

A square is always a rectangle.

The diagonals of a rhombus always bisect each other.

A trapezoid always has a sum of exterior angle measures of 360°.

A kite's diagonals are always perpendicular.

3. Given one interior angle of a regular polygon 165.6°, find the number of sides.

ext angle = 14.4

$\frac{360}{14.4} = 25$ sides

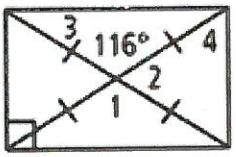
4. Given that the sum of the interior angles is 7740°, find the measure of each exterior angle.

$\frac{7740}{180} = 43$ triangles

45 sides

5. Find the measure of each angle.

In the rectangle below, find the measure of the numbered angle measures



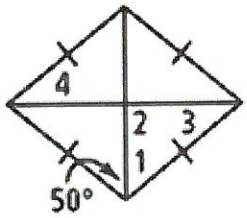
$m\angle 1 = 116^\circ$

$m\angle 2 = 64^\circ$

$m\angle 3 = 32^\circ$

$m\angle 4 = 58^\circ$

In the rhombus below, find the measure of the numbered angles



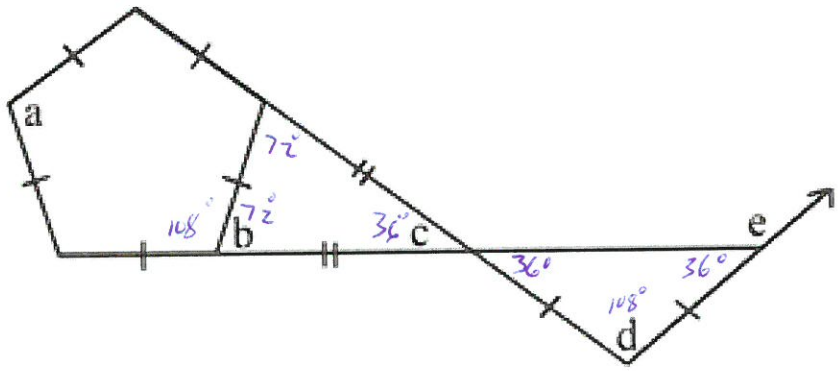
$m\angle 1 = 50^\circ$

$m\angle 2 = 90^\circ$

$m\angle 3 = 40^\circ$

$m\angle 4 = 40^\circ$

6. Find the measure of each angle.



a = 108°

b = 72°

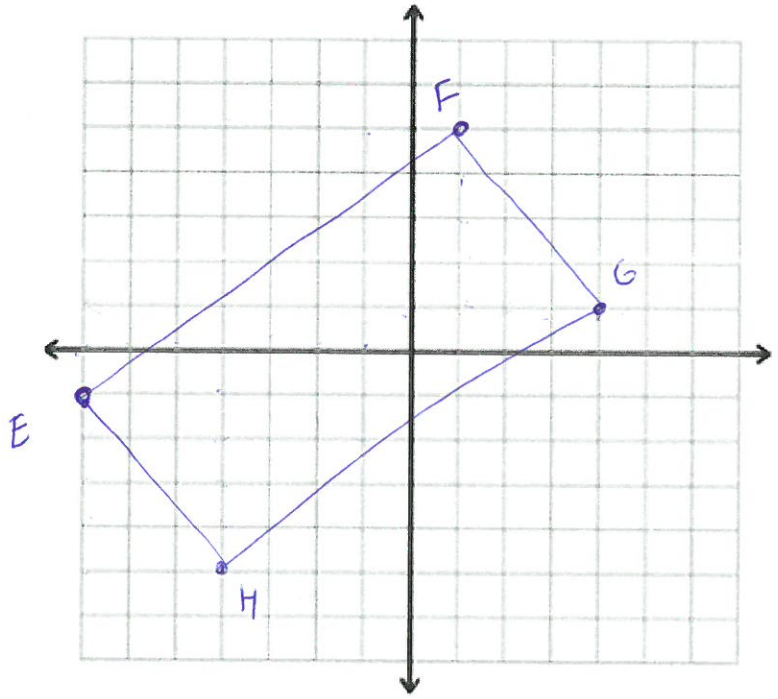
c = 36°

d = 108°

e = 144°

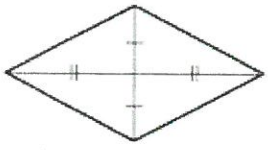
7. Classify the quadrilateral EFGH with its most specific name. You need to justify your answers using slope and distance (length) by filling out the table. Provide a brief explanation justifying your classification.
E(-7, -1) F(1, 5) G(4, 1) H(-4, -5)

Slope ~~AB~~ EF	$6/8 = 3/4$
Slope ~~BC~~ FG	$-4/3$
Slope ~~CD~~ GH	$3/4$
Slope ~~AD~~ EH	$-4/3$
Length ~~AB~~ EF	10
Length ~~BC~~ FG	5
Length ~~CD~~ GH	10
Length ~~AD~~ EH	5
Quadrilateral	Rectangle

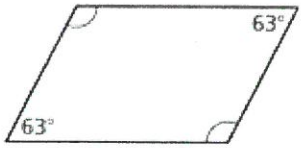


Explanation:
opp sides have same slope so opp sides are perpendicular. Con secutive side are perpendicular because the slopes are opp. (reciprocal)

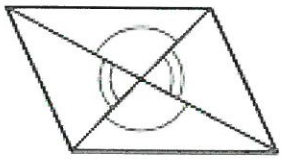
8. Do you have enough information to prove the given quadrilateral is a parallelogram? If yes, provide a brief explanation.



Yes, diags bisect

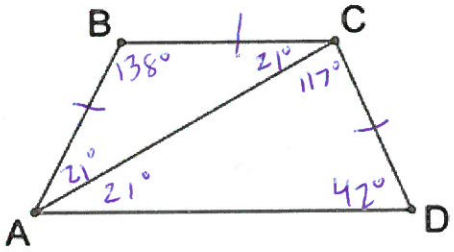


Yes, opp angles are $\cong$



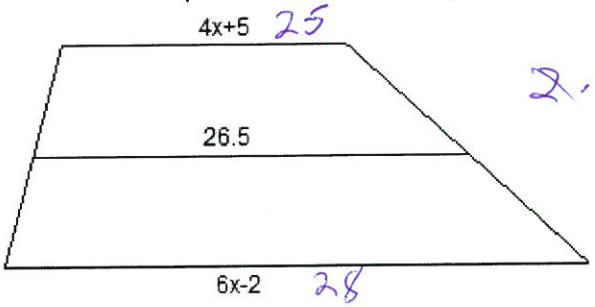
No

9. In ABCD, AB = BC = CD. If angle BCA has a measure of 21°, find the measure of angle ACD.



117°

10. Given the trapezoid with a midsegment shown below, find the length of each base.



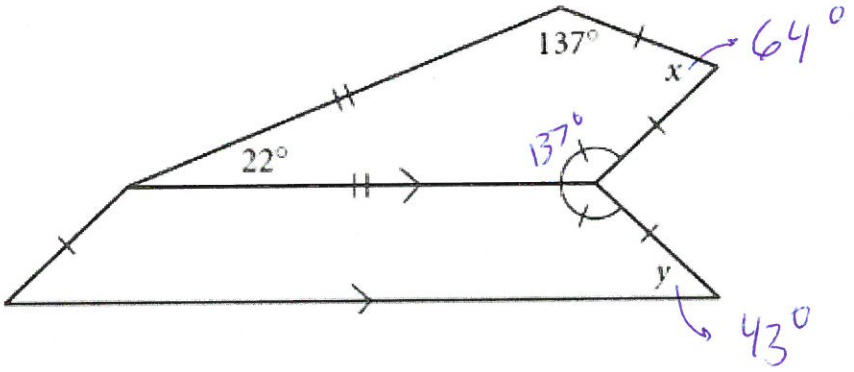
2. $\frac{4x+5+6x-2}{2} = 26.5 \cdot 2$

$10x+3 = 53$

$10x = 50$

$x = 5$

11. Find the measure of x and y.



12. A regular hexagonal frame is cut as shown. What is the measure of angles a and b?