

Lesson 6-8L: Quadrilateral Conclusions

Agenda

- Check HW 6.6
- Guided Notes 6.8

Homework

- Worksheet
- Don't forget to come to assigned remediation sessions

p. 432-433: #27,30,32,34,35

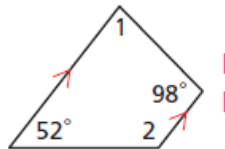
find the measure of

28. $m\angle 1 = 116^\circ$;
 $m\angle 2 = 46^\circ$

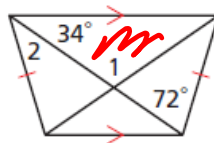
29. $m\angle 1 = 51^\circ$;
 $m\angle 2 = 16^\circ$

30. $m\angle 1 = 112^\circ$;
 $m\angle 2 = 40^\circ$

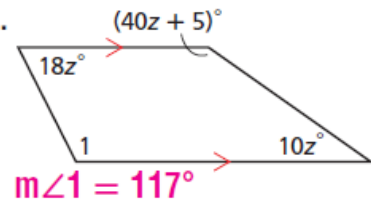
27.



30.

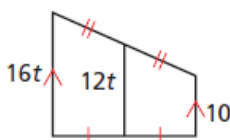


32.



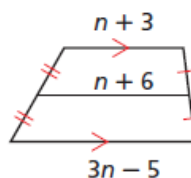
Algebra Find the length of the midsegment of each trapezoid.

34.



15

35.



13

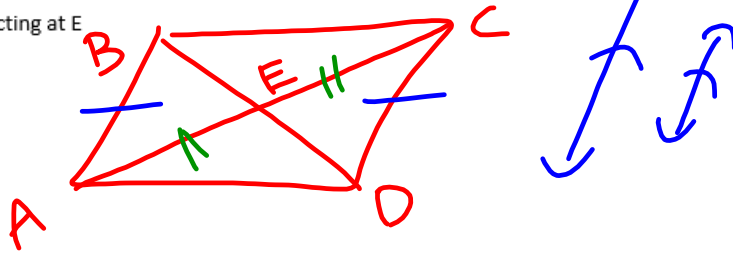
36.

Geometry LAB Name _____ Date: _____ Section: _____

Lesson 6.8: Quadrilateral Conclusions Notes & Homework

Drawing Conclusions about Angles and Segments Given a Quadrilateral

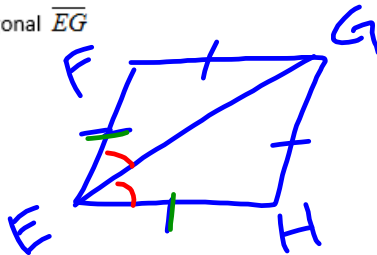
- 1) Given: $\square ABCD$ with diagonals intersecting at E
 a. Draw it!



- b. Fill in and explain why each of the following relationships is true:

- i. $\overline{AB} \cong \overline{CD}$ because $\square \rightarrow$ OPPOSITE SIDES \cong
 ii. \overline{BE} bisects \overline{AC} because $\square \rightarrow$ DIAGONALS BISECT EACH OTHER

- 2) Given: Rhombus EFGH with diagonal \overline{EG}
 a. Draw it!

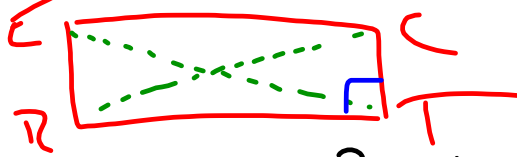


- b. Explain why each of the following relationships is true:

- i. $\angle HEG \cong \angle FEG$ because RHOMBUS \rightarrow DIAGONAL
 ii. $\overline{EH} \cong \overline{EF}$ because RHOMBUS \rightarrow IS A BISECTOR
4 \cong SIDES

3) Given: Rectangle RECT

a. Draw it!



Rectangle →

b. Fill in and explain why each of the following relationships is true:

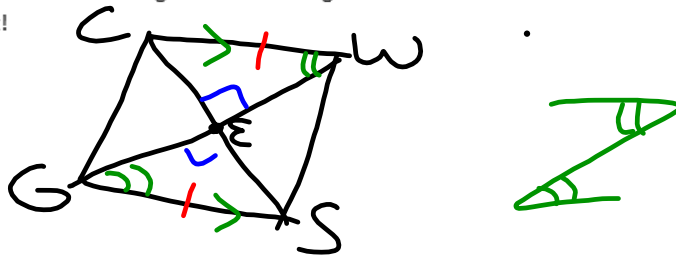
i. $\overline{CR} \cong \overline{ET}$ because Diagonals Congruent

ii. $\angle T$ is a RT angle because Rectangle → 4 RT's

(Signature)

4) Given: Rhombus CWSG with diagonals intersecting at E

a. Draw it!



b. Fill in and explain why each of the following relationships is true:

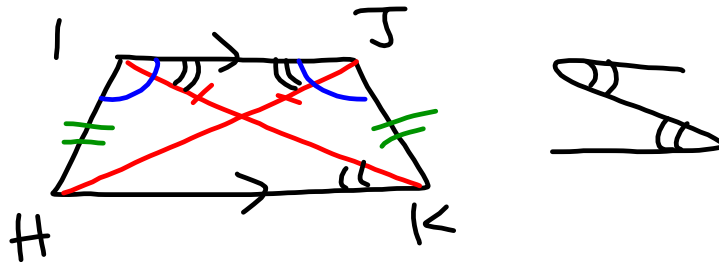
i. $\overline{CE} \perp \overline{GW}$ because RHOMBUS → ⊥ DIAG therefore $\angle SEG$ & $\angle CEW$ are right angles because ⊥ LINES → RT's

ii. $\overline{CW} \cong \overline{GS}$ because RHOMBUS → 4 ≅ SIDES

iii. $\overline{CW} \parallel \overline{GS}$ because RHOMBUS → OPP SIDES ∥ therefore $\angle CWE \cong \angle SGE$ because ∥ → ALT INT's ≅

5) Given: Isosceles trapezoid $HIJK$ w/ base \overline{HK}

a. Draw it!



b. Fill in and explain why each of the following relationships is true:

i. $\overline{IK} \cong \overline{JH}$ because ISOS TRAP \rightarrow DIAGONALS \cong

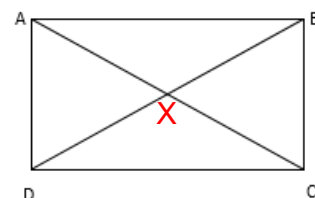
ii. $\angle JIH \cong \angle IJK$ because ISOS TRAP \rightarrow BASE \angle 'S \cong

iii. $\overline{HI} \cong \overline{JK}$ because ISOS TRAP \rightarrow \cong LEGS

iv. $\overline{IJ} \parallel \overline{HK}$ because ISOS TRAP \rightarrow 1 SET \parallel SIDES therefore
 $\angle JIK \cong \angle IJK$ because $\parallel \rightarrow$ ALT INT \angle 'S \cong

6) Given: Rectangle ABCD with diagonals intersecting at X

Prove: $\overline{AX} \cong \overline{XC} \cong \overline{BX} \cong \overline{XD}$



Statements	Reasons
1) ABCD is a rectangle with diagonals intersecting at X	1) Given
2) $\overline{AC} \cong \overline{BD}$	2) _____
3) Rectangle ABCD is a parallelogram	3) A rectangle is a parallelogram
4) \overline{AC} & \overline{BD} bisect each other	4) _____
5) _____	5) Definition of a segment bisector
6) $\overline{AX} \cong \overline{XC} \cong \overline{BX} \cong \overline{XD}$	6) Halves of congruent segments are congruent

Using Quadrilaterals to Make Conclusions about Other Figures

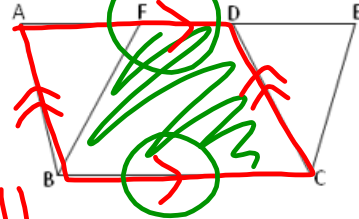
ABCD

- 7) Given $\square ABCD$ is a parallelogram, what can you conclude about quadrilateral BFDC? IT IS A TRAPEZOID

Explain your reasoning:

$\square ABCD \rightarrow \overline{AFD} \parallel \overline{BC}$
 $\square \rightarrow$ OPP SIDES ARE \parallel

1 SET OPP SIDES \parallel



- 8) Suppose that $\square ABCD$ is a parallelogram and that M and N are the midpoints of \overline{AB} and \overline{CD} , respectively. What can you conclude about the quadrilateral AMCN? _____

Explain your reasoning:

$\square \rightarrow$ OPP SIDES \parallel

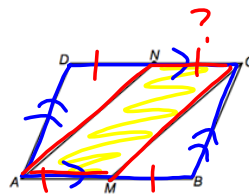
$\overline{DNC} \parallel \overline{AMB}$

MIDPOINTS \rightarrow 2 \cong SEGMS (HALVES)

$\overline{AM} \cong \overline{BM}$
 $\overline{DN} \cong \overline{CN}$

HALVES OF CONGRUENT SEGMENTS ARE \cong . $\overline{AM} \cong \overline{DN}$

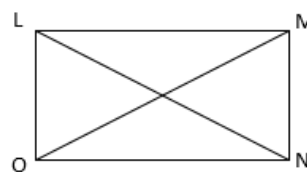
$\overline{AB} \cong \overline{CD}$ b/c $\square \rightarrow$ OPP SIDES \cong



9) Given: $\square LMNO$; $\overline{LN} \cong \overline{MO}$

Conclusion: $\triangle NOL$ is a right triangle

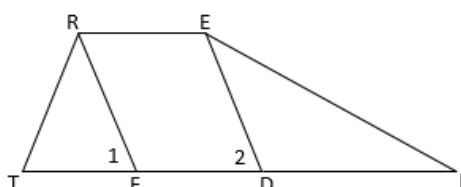
- a. LMNO is also a _____ because _____
- b. $\angle LON$ is a _____ because rectangle \rightarrow 4 right angles
- c. $\triangle NOL$ is a right triangle because _____



10) Given: TREK is a trapezoid; $\angle 1 \cong \angle 2$

Conclusion: FRED is a parallelogram

- a. _____ because in a trapezoid, one pair of opposite sides are parallel.
- b. _____ because congruent corresponding angles \rightarrow parallel lines.
- c. FRED is a parallelogram because **both pairs of opposite sides are** _____.



11) Given: ABCD is a rectangle and Q is the midpoint of \overline{AD}

- Highlight/shade in triangles ABQ and DCQ. What do you think you can conclude about them? _____
- Which properties of the rectangle did you consider when making your conclusion?

