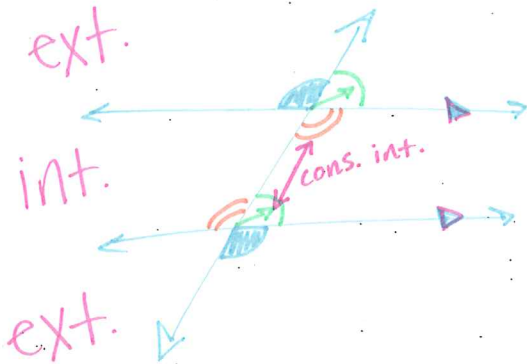


Warm Up:

List the properties of angles created by parallel lines cut by a transversal.



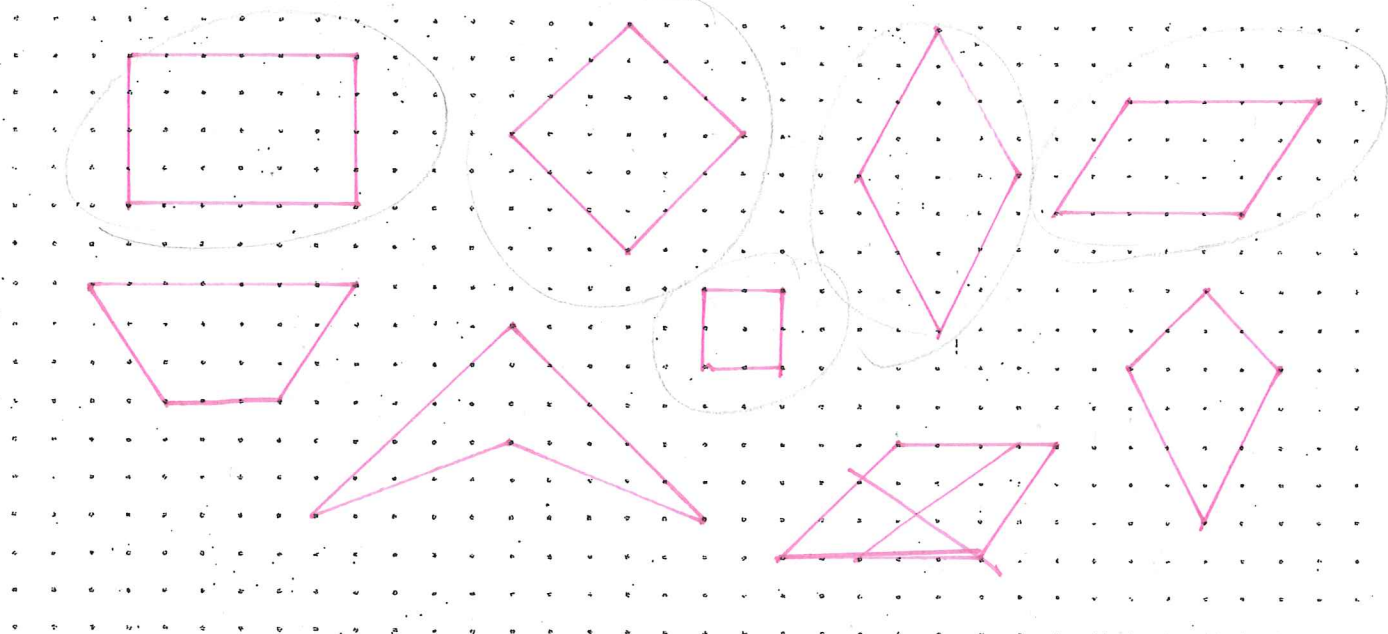
- alternate exterior \angle s
- alternate interior \angle s
- Corresponding \angle s
- consecutive interior \angle s (same side of transversal)

List all the shortcuts used in proving that 2 or more triangles are congruent.

- SSS
- AAS
- SAS
- ASA

The focus of chapter 6 is on properties of quadrilaterals.

1. What is a quadrilateral? 4 sided figure
2. Draw as many sketches of as many DIFFERENT types of quadrilaterals as you can below.

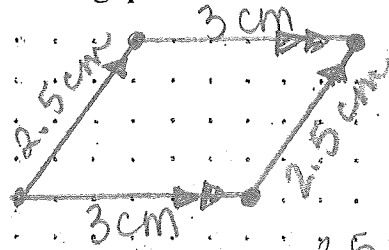


3. What makes a parallelogram "special"? opposite sides are parallel
 (what is the BASIC requirement for a p'gram)

4. Circle the shapes under question 2 that appear to be a parallelogram?

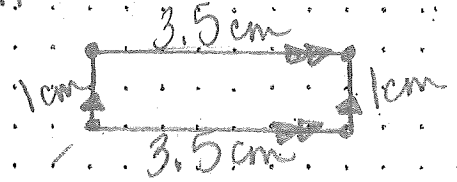
Use the dots to make drawings and derive answers to the following questions.

5. Draw 2 different types of p'grams. Measure the lengths of all sides. Record lengths on drawing using centimeters.

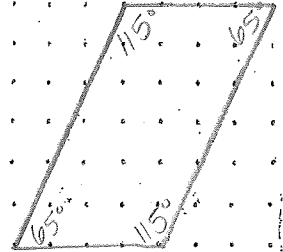
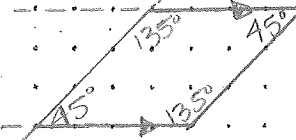


6. What conjecture can be made after comparing yours with your partner?

opposite sides are congruent.



7. Draw 2 more p'grams that are distinctly different from each other. Measure and record the angle measures.

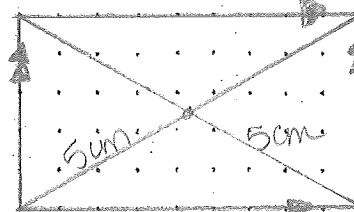


8. Using your knowledge of parallel lines cut by transversals, what patterns occurs inside a p'gram.

a. cons. int. \angle s are suppl.

b. opposite \angle s are \cong

9. Draw 2 more p'grams that are distinctly different from each other. Draw the diagonals of each p'gram.



10. Measure the lengths of each in centimeters. Compare your diags with your partners. What can you conclude?

nothing



11. Now measure each of the 4 smaller pieces of the diags (in centimeters). What can you conclude now?

diags bisect each other

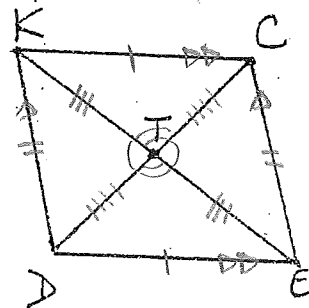
12. Using the drawing of the p'gram below, name as many pairs of congruent triangles. How many pairs of congruent triangles are there? _____

$$\triangle KCT \cong \triangle EDT$$

$$\triangle KDT \cong \triangle ECT$$

$$\triangle KCD \cong \triangle EDC$$

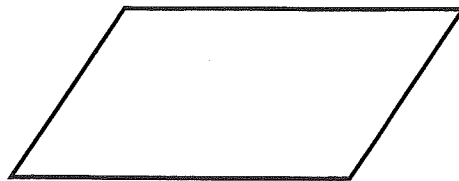
$$\triangle KEC \cong \triangle EKD$$



(answers will vary)

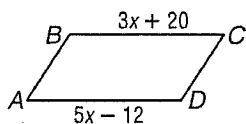
6-2 Parallelograms

- Both pairs of opposite sides are parallel
- Opposite sides are congruent
- Opposite angles are congruent
- Consecutive angles are supplementary
- If you have one right angle, then you have four right angles.
- Diagonals bisect each other
- Diagonals separate the parallelogram into two congruent triangles.

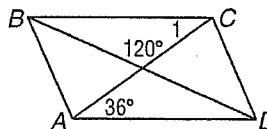


Examples:

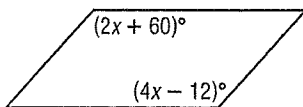
1.) For parallelogram $ABCD$, find x .
 $m\angle 1$.



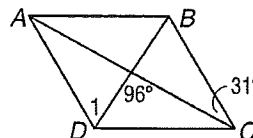
2.) For parallelogram $ABCD$, find $m\angle 1$.



3.) Find x so that this quadrilateral is a parallelogram.



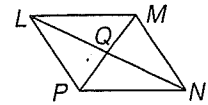
4.) For parallelogram $ABCD$, find $m\angle 1$.



6-2 Practice

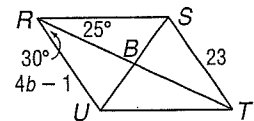
Parallelograms

Complete each statement about $\square LMNP$. Justify your answer.



1. $\overline{LQ} \cong$?
2. $\angle LMN \cong$?
3. $\triangle LMP \cong$?
4. $\angle NPL$ is supplementary to ?
5. $\overline{LM} \cong$?

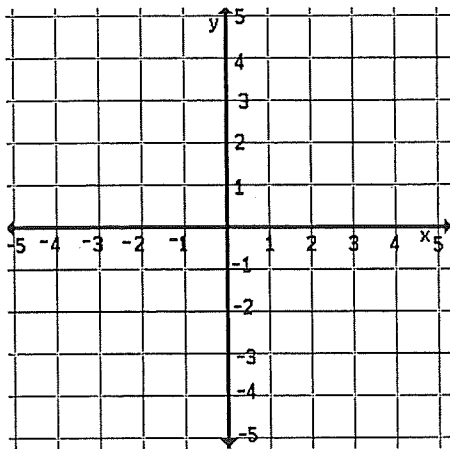
ALGEBRA Use $\square RSTU$ to find each measure or value.



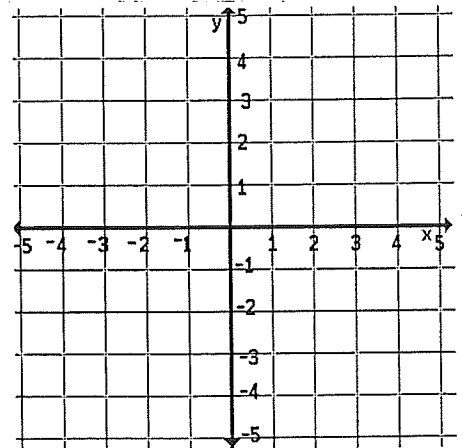
6. $m\angle RST =$ _____
7. $m\angle STU =$ _____
8. $m\angle TUR =$ _____
9. $b =$ _____

COORDINATE GEOMETRY Find the coordinates of the intersection of the diagonals of parallelogram $PRYZ$ given each set of vertices.

10. $P(2, 5), R(3, 3), Y(-2, -3), Z(-3, -1)$



11. $P(2, 3), R(1, -2), Y(-5, -7), Z(-4, -2)$



13. **CONSTRUCTION** Mr. Rodriguez used the parallelogram at the right to design a herringbone pattern for a paving stone. He will use the paving stone for a sidewalk. If $m\angle 1$ is 130, find $m\angle 2$, $m\angle 3$, and $m\angle 4$.

