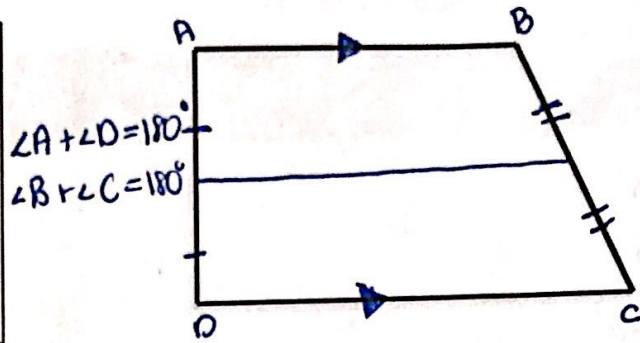


Day 5 – Trapezoids & Kites – Notes

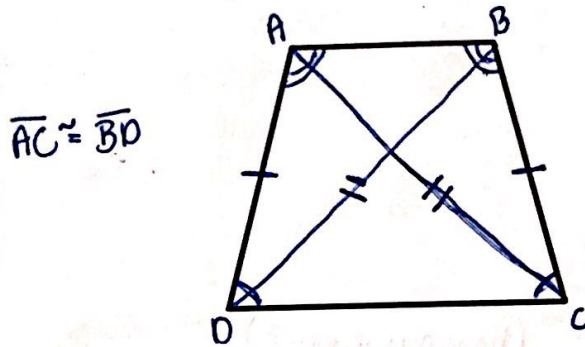
Trapezoid

- One pair of opposite sides are parallel (Called bases)
- Consecutive angles between bases are supplementary
- Median connects the midpoints of a trapezoid's legs



Isosceles Trapezoid

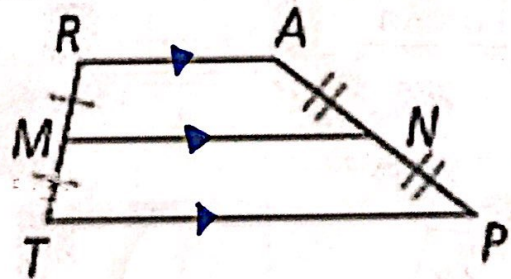
- All properties of a trapezoid
- Legs are congruent
- Each pair of base angles are congruent
- Diagonals are congruent



Trapezoid Midsegment Theorem

If a quadrilateral is a trapezoid, then....

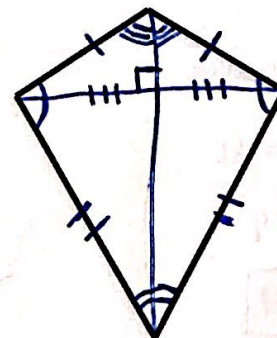
- The midsegment is parallel to the bases.
- The length of the midsegment is half the sum of the lengths of the bases. $\overline{MN} = \frac{1}{2}(\overline{RA} + \overline{TP})$



Kite

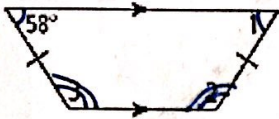
- Two pairs of congruent sides (opposite sides not congruent)
- Diagonals are perpendicular
- Longer diagonal bisects the shorter diagonal
- One diagonal bisects the other
- Angles where two non-congruent sides meet are congruent

• One diagonal bisects angles



Example Problems

1. Find the measure of angles 1, 2, and 3.

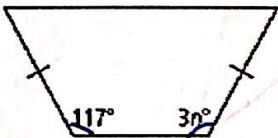


$$\angle 1 = 58^\circ$$

$$\angle 2 = 122^\circ$$

$$\angle 3 = 122^\circ$$

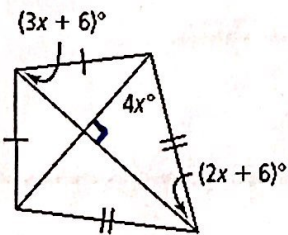
3. What is the value of n?



$$3n = 117 \text{ (base angles are } \cong \text{)}$$

$$n = 39$$

5. Find the value of x.



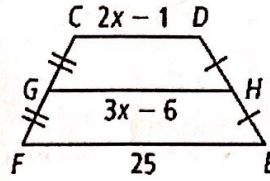
$$2x + 6 + 4x + 90 = 180$$

$$6x + 96 = 180$$

$$6x = 84$$

$$x = 14$$

2. Find the length of the midsegment.



$$3x - 6 = \frac{1}{2}(2x - 1 + 25)$$

$$3x - 6 = \frac{1}{2}(2x + 24)$$

$$3x - 6 = x + 12$$

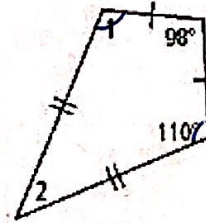
$$2x = 18$$

$$x = 9$$

$$\overline{GH} = 3(9) - 6$$

$$\overline{GH} = 21$$

4. Find the measure of angles 1 and 2.



$$\angle 1 = 110^\circ \text{ (opp } \angle \text{'s are } \cong \text{)}$$

$$\angle 2 = 42^\circ$$