

# 7.5 - Proving Kite, Trapezoid, Isosceles Trapezoid

## Warmup

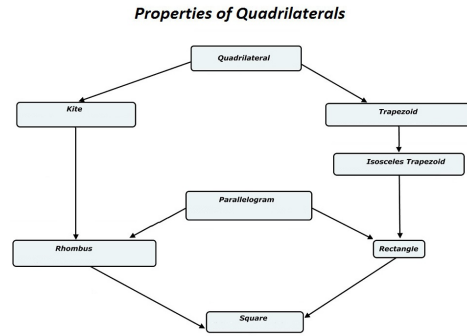
Quizizz - Properties of Special Quadrilaterals

## Homework Check

7.4 #57-60

7.1-7.4 Quiz tomorrow (Tues 2/4)

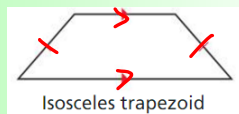
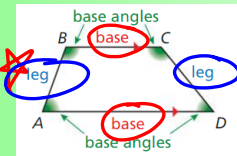
- Flowchart allowed as long as nothing else is on it!
- Make sure you are comfortable with all properties of parallelogram, rhombus, rectangle, and square.
- You will need slope, distance formula, and midpoint!



## 7.5 - More Special Quadrilaterals

**Trapezoid** = Quadrilateral with exactly **one pair of opposite sides parallel**.

- The parallel sides are called the *bases*
- The other sides (non-parallel) are called the *legs*
- If the legs are congruent, then the trapezoid is an **Isosceles Trapezoid**.



## Isosceles Trapezoid

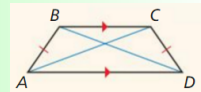
1. Each pair of base angles is congruent.

$$\angle B \cong \angle C \quad \angle A \cong \angle D$$



2. Diagonals are congruent.

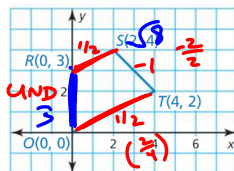
$$\overline{BD} \cong \overline{AC}$$



## Example #1 Identifying a Trapezoid in the Coordinate Plane

Show that *ORST* is a trapezoid. Then decide whether it is isosceles.

- 1 PAIR opp. sides (1 → TRAP.)
- 3 ≠ √6 NOT ISOS.

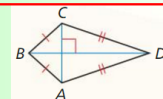


## 7.5 - More Special Quadrilaterals

**Kite** = Quadrilateral with **two pairs of consecutive sides congruent**, but opposite sides are not congruent.

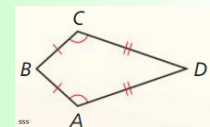
- Diagonals are perpendicular to each other

$$\overline{BD} \perp \overline{AC}$$



- Exactly one pair of opposite angles congruent

$$\angle A \cong \angle C$$



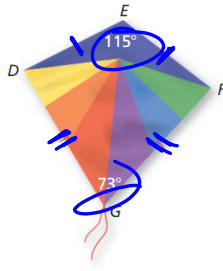
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## Example #3 Finding Angle Measures in a kite

Find  $m\angle D$  in the kite shown.

$$115^\circ + 73^\circ = 188^\circ$$

$$\begin{array}{r} 360 \\ -188 \\ \hline 172 \end{array} \div 2 = \boxed{86^\circ}$$



## Homework

7.5 p.403

#5,6,8,15,18,20-24,31-34,38

HW for Wed 2/5 HW for Thur 2/6

Wed	2/5	7.5 - Trapezoids and Kites
Thur	2/6	7.5 (Cont.)
Fri	2/7	Chap. 7 Review Assignment (Due Tues 2/11)
Mon	2/10	Chap. 7 In-class Activity (Review)
Tues	2/11	Chap. 7 Test

