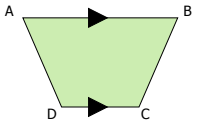
§6.5 Trapezoids & Kites

Definitions

- A _____ is a quadrilateral with exactly _____ _____ of _____ sides.
  - The _____ sides are the _____
  - A _____ also has ___ ____ of _____.
- An _____ is a _____ whose _____ are _____.

Theorems

- If a _____ is _____, then each pair of _____ is _____.

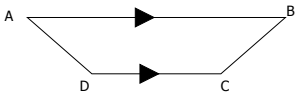


If ABCD is an isos. trap., then

and

Theorems

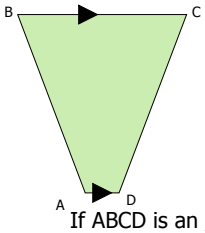
- If a trapezoid has a pair of _____ _____, then it is an _____.



If ABCD is a trapezoid and _____ or _____ then ABCD is an _____.

Theorems

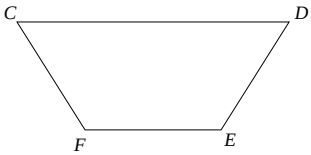
- A trapezoid is _____ if and only if its _____ are _____.



If ABCD is an _____, then
If _____, then ABCD is an _____.

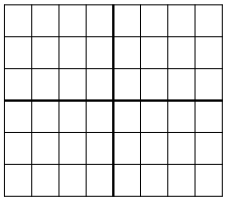
Examples

- CDEF is an isosceles trapezoid, with CE = 10 and $m\angle E = 95°$. Find DF, $m\angle C, m\angle D, \& m\angle F$.



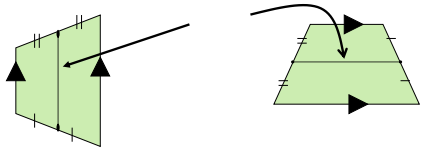
Examples

- The vertices of $WXYZ$ are $W(-1, 2)$, $X(3, 0)$, $Y(4, -3)$, and $Z(-4, 1)$. Show that WXYZ is an isosceles trapezoid.



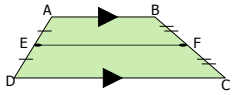
Definitions

- The _____ of a trapezoid is the segment that connects the midpoints of its legs.



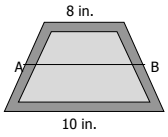
Theorems

- Midsegment Theorem for Trapezoids
  - The midsegment of a trapezoid is _____ to each base and its _____ is _____ the _____ of the lengths of the bases.



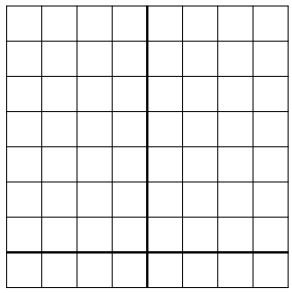
Examples

- A potter crafts a trapezoidal relish dish, placing a divider, shown by $\overline{AB}$, in the middle of the dish. How long must the divider be to ensure that it divides the legs in half?



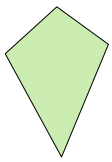
Check Points

The vertices of *KLMN* are *K*(-3, 5), *L*(0, 7), *M*(2, 7), and *N*(3, 5). Is *KLMN* a trapezoid? If it is, tell whether it is isosceles and find its midsegment length.



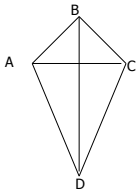
Definitions

- A ___ is a quadrilateral that has _____ _____, but _____ _____ are _____.



Theorems

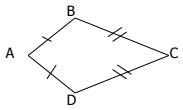
- If a quadrilateral is a kite, then its _____.



If ABCD is a kite, then

Theorems

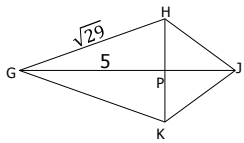
- If a quadrilateral is a kite, then _____ _____.



If ABCD is a kite, then and .

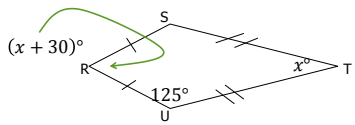
Examples

- *GHJK* is a kite. Find *HP*.



Examples

- RSTU is a kite. Find $m\angle R$, $m\angle S$, and $m\angle T$.



Check Points

1) Find the length of each side of the kite shown.
2) If $m\angle ADC = 92°$ and $m\angle ABC = 128°$, find $m\angle BAD$ and $m\angle BCD$.