

Trapezoids

Kites

Trapezoid: A quadrilateral with 1 pair of ~~parallel~~ sides called the ~~bases~~.

- consecutive \angle 's between bases are supplementary.

$$\angle A + \angle D = 180^\circ, \angle B + \angle C = 180^\circ$$

Isosceles Trapezoid:

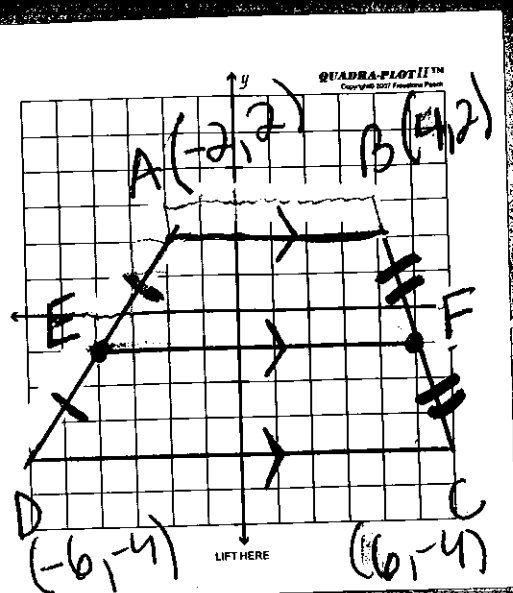
legs are \cong ($AD \cong BC$)

- Base \angle 's are \cong

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

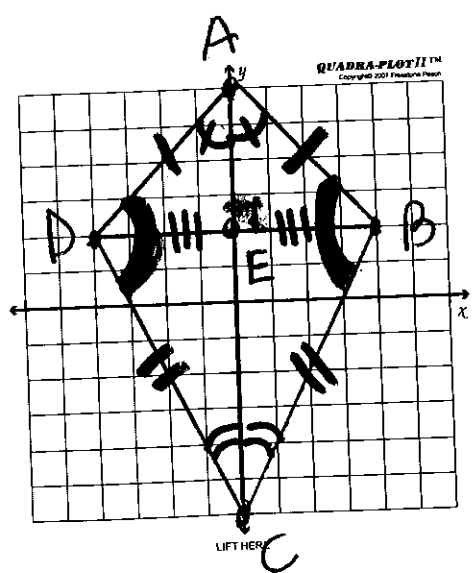
- Diagonals are \cong

(NOT \perp , DO NOT bisect)



$BC = \left(\frac{6+4}{2}, \frac{-4+2}{2} \right) = (5, -1)$
 $AD = \left(\frac{-6+(-2)}{2}, \frac{-4+2}{2} \right) = (-4, -1)$
 length of $BC = \sqrt{2^2 + 1^2} = \sqrt{5}$
 length of $AD = \sqrt{2^2 + 1^2} = \sqrt{5}$
 $BC = AD$

EF: Midsegment of the trapezoid
 It connects the midpoints of the legs
 midsegment: $\left(\frac{AB+DC}{2} \right)$ add the bases and divide by 2



Kite: consecutive sides are congruent.

$$\overline{DA} \cong \overline{BA}, \overline{DC} \cong \overline{BC}$$

Angles between non-congruent sides are congruent.

$$\angle D \cong \angle B$$

Diagonals are \perp .

* $\overline{DE} \cong \overline{BE}$ (only 1 diagonal gets bisected)

* \overline{AC} bisects $\angle A$ and $\angle C$ (These \angle 's are between \cong sides)