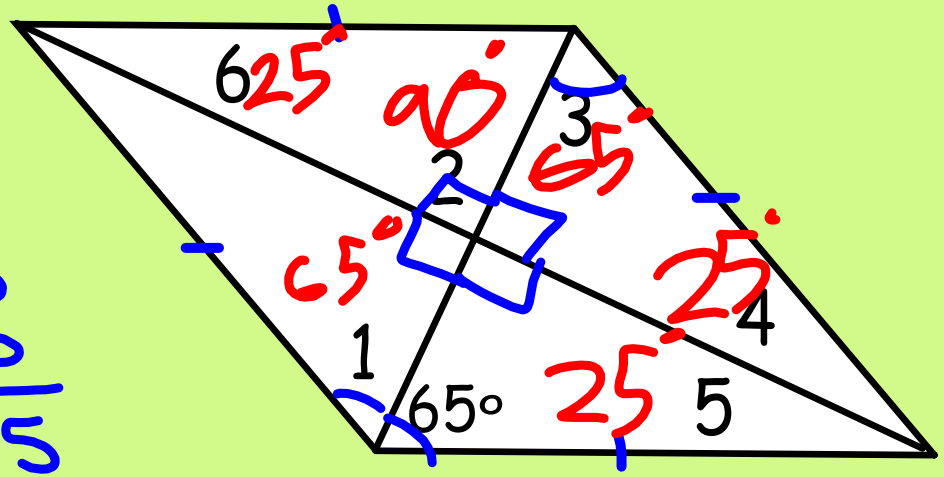
12/16/19 - Warm Up Problem

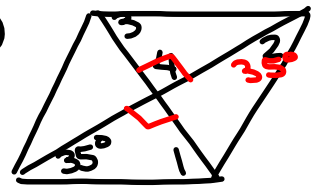
Find each numbered angle in this rhombus.



180
−155
25

p. 379 (9-17)(24-39)(42-44)

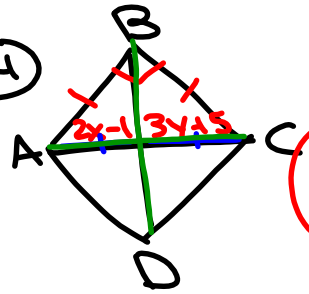
(15)



$m\angle 1 = 55$
$m\angle 2 = 35$
$m\angle 3 = 55$
$m\angle 4 = 90$

$180 - 125 = 55$

(44)



$BD = 4x - y + 1$

$2x - 1 = 3y + 5$

$4x - y + 1 = 2x + 3y + 4$
$-2x \quad +1 \quad -2x \quad -1$

$2x = 4y + 3$

$2x = 4(3) + 3$

$2x = 15$

$x = 7.5$

$4y + 3 - 1 = 3y + 5$

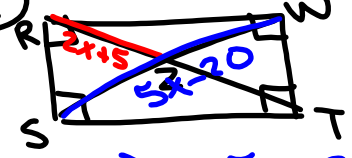
$4y + 2 = 3y + 5$

$y + 2 = 5$

$y = 3$

(42)

$RZ = 2x + 5$
$SW = 5x - 20$



$2(2x+5) = 5x - 20$
$4x + 10 = 5x - 20$

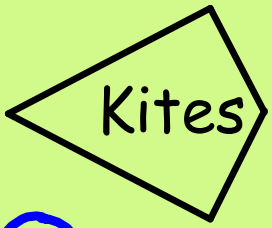
Concept 16 - Trapezoids and Kites

Goal: find and use properties of kites and trapezoids

Quadrilateral Families

2 pairs of parallel sides

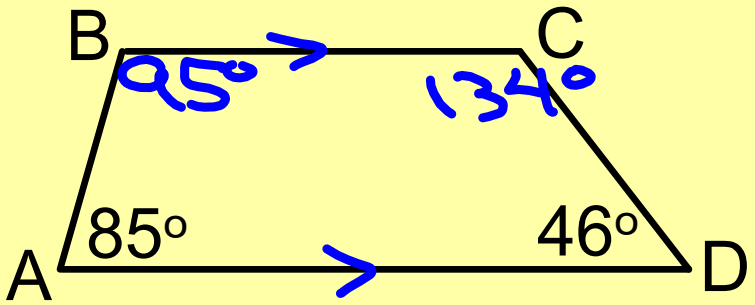
1 pairs of parallel sides

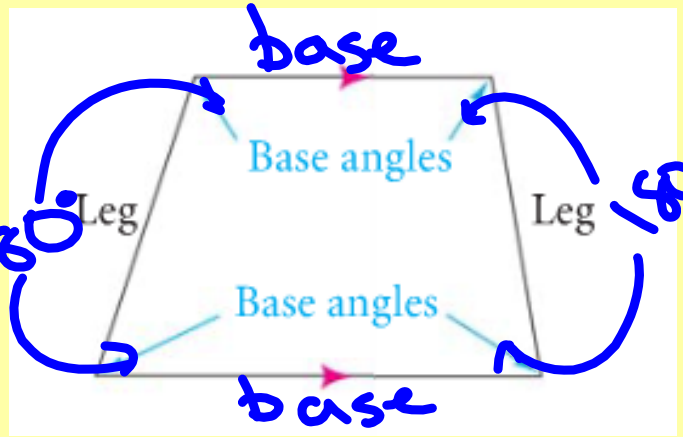


0 pairs of parallel sides

Parts of a Trapezoid

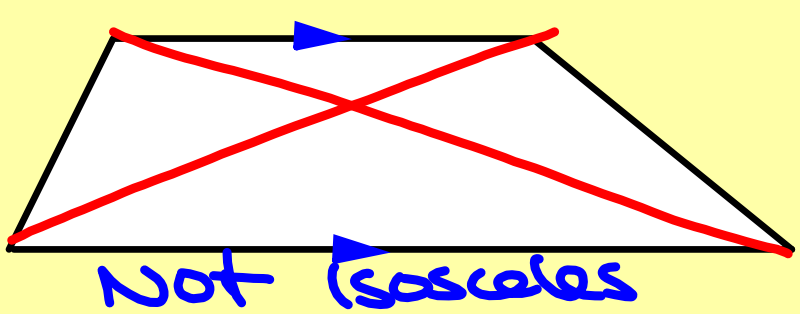
Trapezoid: a quadrilateral with exactly one pair of parallel sides

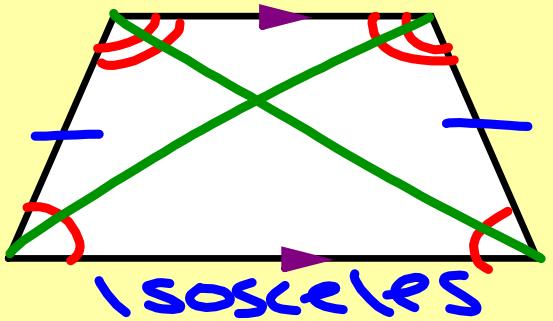




On all trapezoids, the angles on the same leg are supplementary.

Isosceles Trapezoid: a trapezoid with congruent legs



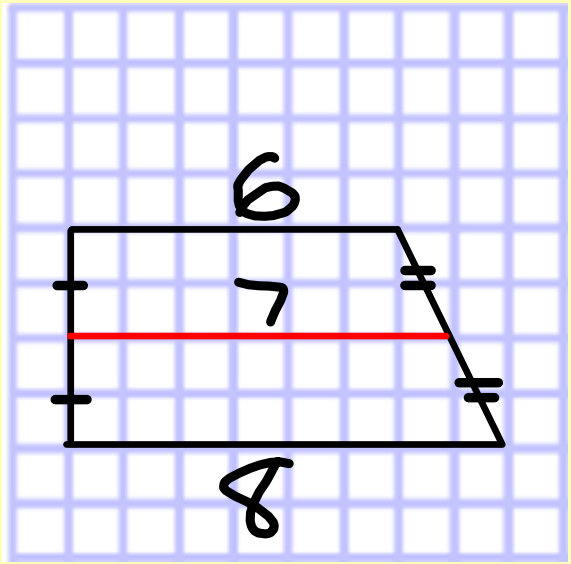


Properties of an Isosceles Trapezoid

1. Both pairs of base angles are congruent
2. Angles on the same leg are supplementary
3. Diagonals are congruent

Midsegments of Trapezoids.

Midsegment of a Trapezoid:
the segment that connects
the midpoints of the legs



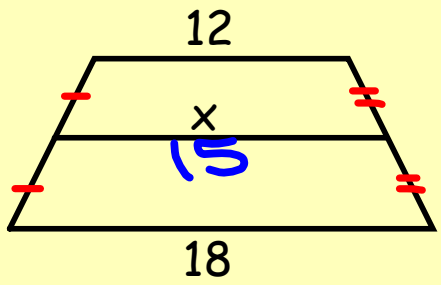
Theorem 6.21 - Trapezoid Midsegment Theorem

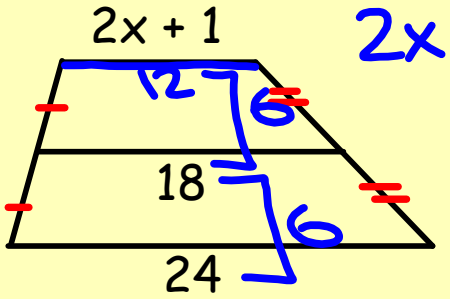
If a quadrilateral is a trapezoid, then

1) the midsegment is parallel to the bases, and

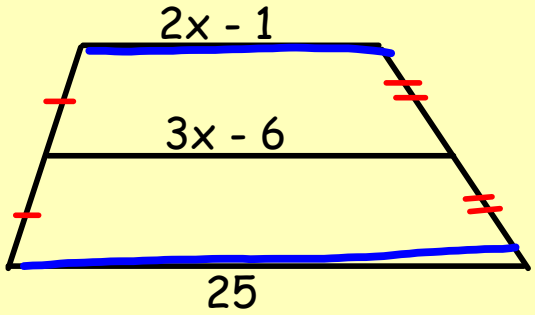
2) the length of the midsegment is half the sum of the bases

Using Midsegments of Trapezoids





$2x+1=12$



$\frac{2x+1+24}{2}=18$

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

$2x+24=6x-12$

$24=4x-12$

$36=4x$

$9=x$

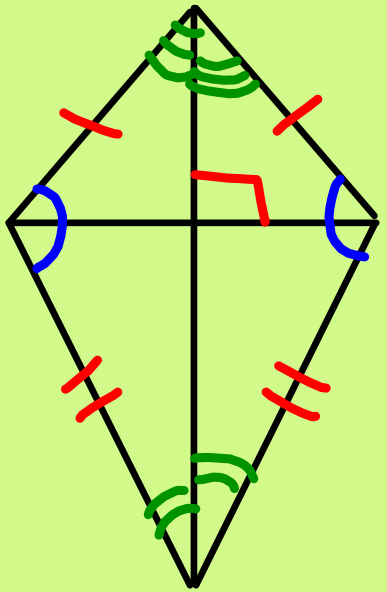
Kite: a quadrilateral that has two pairs of consecutive congruent sides, but opposite sides are not congruent

Properties of Kites

1) no sides are parallel

2) perpendicular diagonals

3) exactly one pair of congruent opposite angles

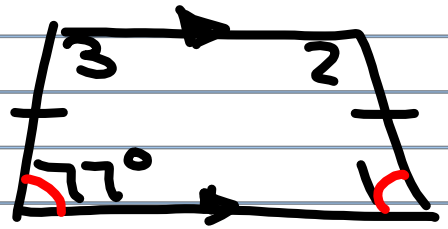


Assignment:

pg. 394
(7-25)

Section 6-5

7)



$180 - 77 = 103$

$\angle 1 = 77$
$\angle 2 = 103$
$\angle 3 = 103$