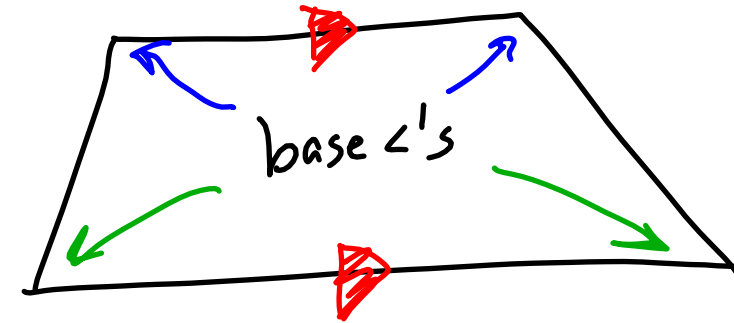


# Trapezoids + Kites

## - Trapezoids

→ 1 pair of parallel sides (bases)

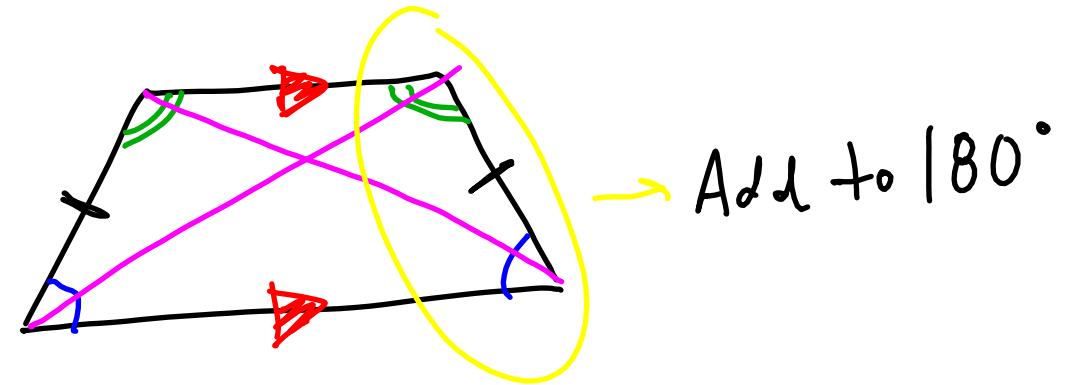
→ base angles → angles that share a base



## - Isosceles Trapezoids → 2 $\cong$ non-parallel sides

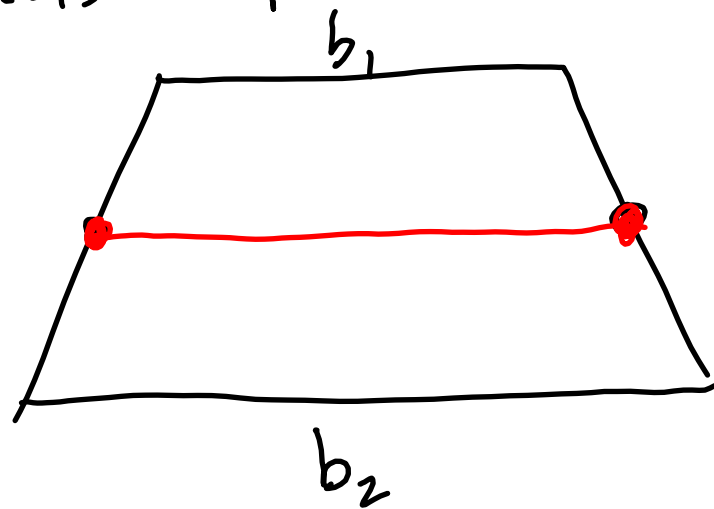
→ each pair of base angles are  $\cong$

→ diagonals are  $\cong$

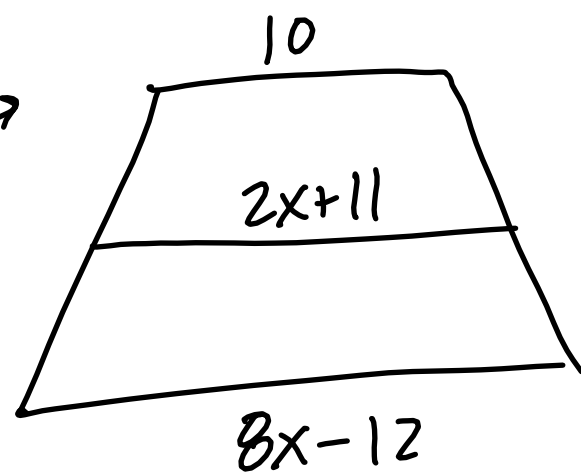


## - Midsegment → connects midpoints of non-parallel sides

$$\hookrightarrow \frac{1}{2}(b_1 + b_2)$$



EX →



$$2x+11 = \frac{1}{2}(10+8x-12)$$

$$2x+11 = \frac{1}{2}(8x-2)$$

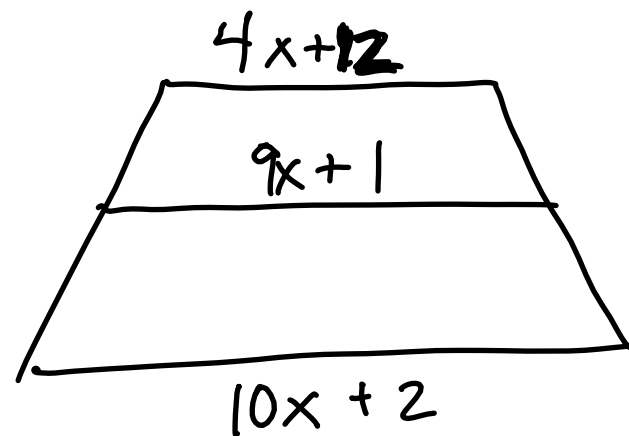
$$\begin{array}{r} 2x+11 = 4x-1 \\ -2x \quad -2x \\ \hline 11 = 4x-1 \end{array}$$

$$\begin{array}{r} 11 = 4x-1 \\ +1 \quad +1 \\ \hline 12 = 4x \end{array}$$

$$\frac{12}{4} = \frac{4x}{4}$$

$$x=3$$

EX →



$$9x+1 = \frac{1}{2}(4x+12+10x+2)$$

$$9x+1 = \frac{1}{2}(14x+14)$$

$$\begin{array}{r} 9x+1 = 7x+7 \\ -7x \quad -7x \\ \hline 2x+1 = 7 \end{array}$$

$$\begin{array}{r} 2x+1 = 7 \\ -1 \quad -1 \\ \hline 2x = 6 \end{array}$$

$$\frac{2x}{2} = \frac{6}{2}$$

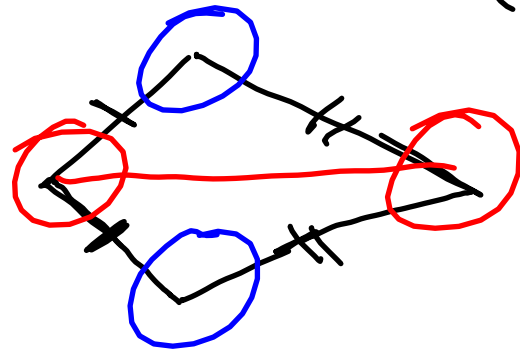
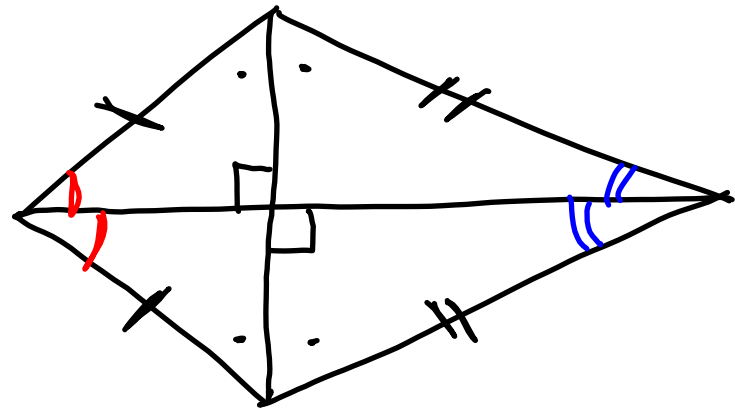
$$x=3$$

$$2(9x+1) = 14x+14$$

$$18x+2 = 14x+14$$

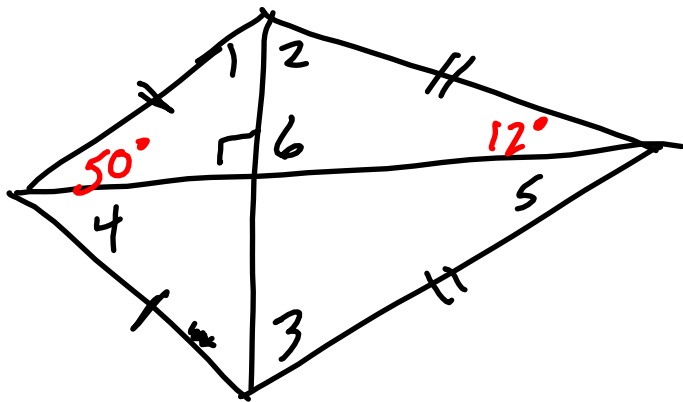
⋮

- Kite  $\rightarrow$  2 sets of  $\cong$  consecutive sides (opposite sides NOT  $\cong$ )



$\rightarrow$  diagonals are perpendicular

EX  $\rightarrow$



$$\begin{aligned} m\angle 1 &= 40^\circ \\ m\angle 2 &= 78^\circ \\ m\angle 3 &= 78^\circ \end{aligned}$$

$$\begin{aligned} m\angle 4 &= 50^\circ \\ m\angle 5 &= 12^\circ \\ m\angle 6 &= 90^\circ \end{aligned}$$

HW: p. 394 → 8-38 even, 47-52