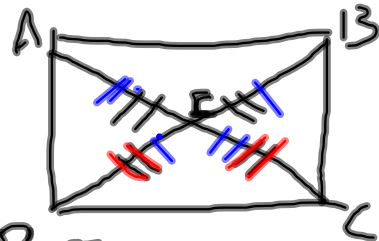


13.

State.	Reasons
1. ABCD is a rect.	1. Given
2. $\overline{AC} \cong \overline{BD}$	2. If rectangle, then the diagonals are \cong
3. ABCD is a parallelogram	3. If a quad is a rect. then it is a parallelogram
4. $\overline{AE} \cong \overline{EC}$	4. diagonals of \square bisect each other
5. $\overline{ED} \cong \overline{EC}$	5. <u>Subst. Prop.</u>
6. $\angle EDC \cong \angle ECD$	6. <u>Isoscles Δ thm.</u>



1. ABCD is a rect.

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

3. ABCD is a parallelogram

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5. $\overline{ED} \cong \overline{EC}$

6. $\angle EDC \cong \angle ECD$

1. Given

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5. Subst. Prop.

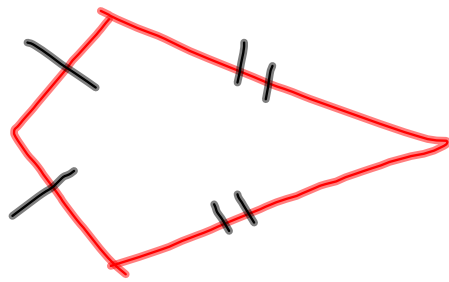
6. Isoscles Δ thm.

$$DE = \frac{1}{2} DB$$

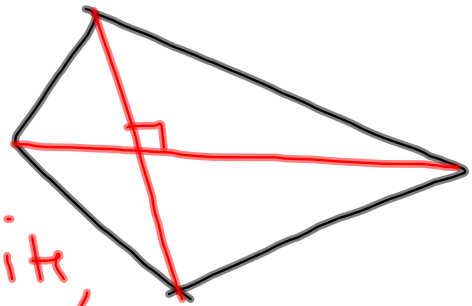
$$DE = \frac{1}{2} AC$$

6-6 Kites & Trapezoids

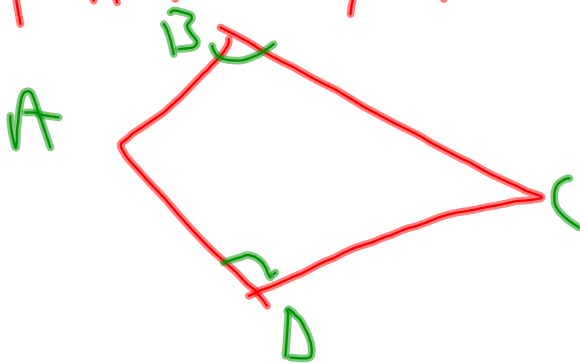
Kite: a quad with 2 pairs of \cong sides.

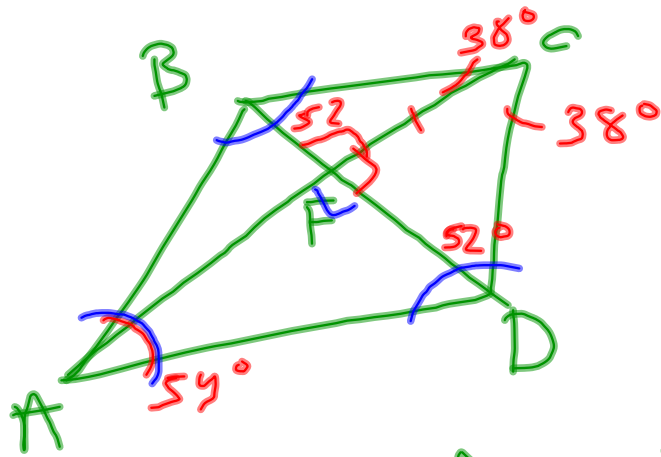


6-6-1: if a quad. is a kite, then its diagonals are \perp



6-6-2: if a quad. is a kite, then exactly 1 pair of opp. \angle 's are \cong .





$$m\angle DAB = 54^\circ, \quad m\angle CDF = 52^\circ$$

a) $m\angle BCD$

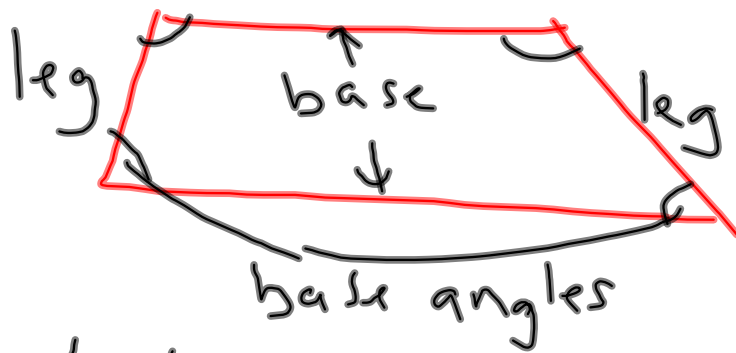
$$76^\circ$$

b) $m\angle ABC$

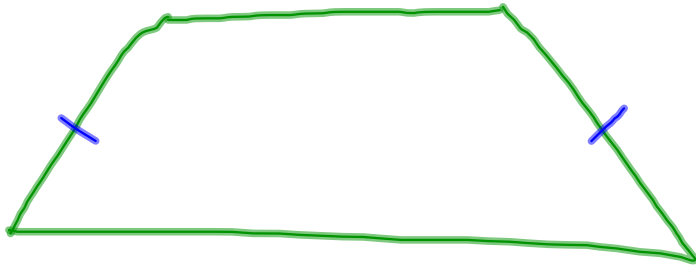
$$54 + 76 + x + x = 360$$

$$x = 115^\circ$$

Trapezoids: quad. with 1 pair of \parallel sides.



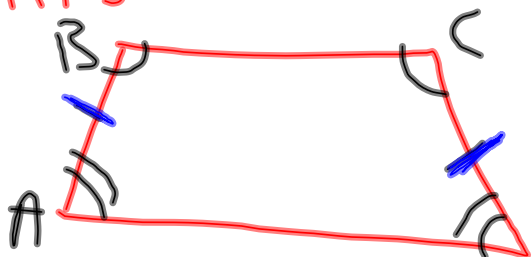
Isosceles trapezoids: trapezoids with \cong legs



6-6-3: if a quad. is an iso. trap.
 then each pair of base \angle 's are \cong .

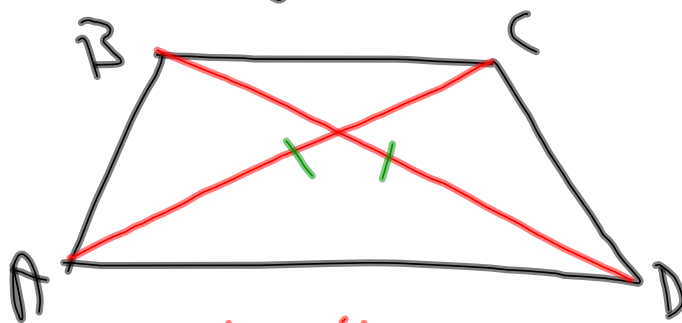


6-6-4: if a trapezoid has 1 pair
 of \cong base \angle 's, then the trapezoid is
 isosceles.

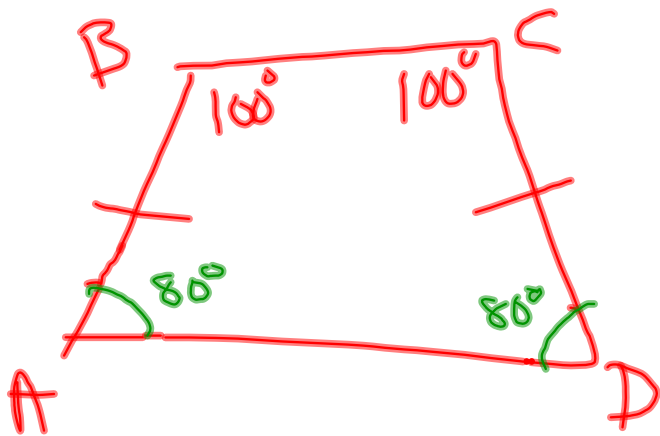


if $\angle B \cong \angle C$ or $\angle A \cong \angle D$, then $\overline{AB} \cong \overline{CD}$

6-6-5: a trapezoid is isosceles iff
 its diagonals are \cong .



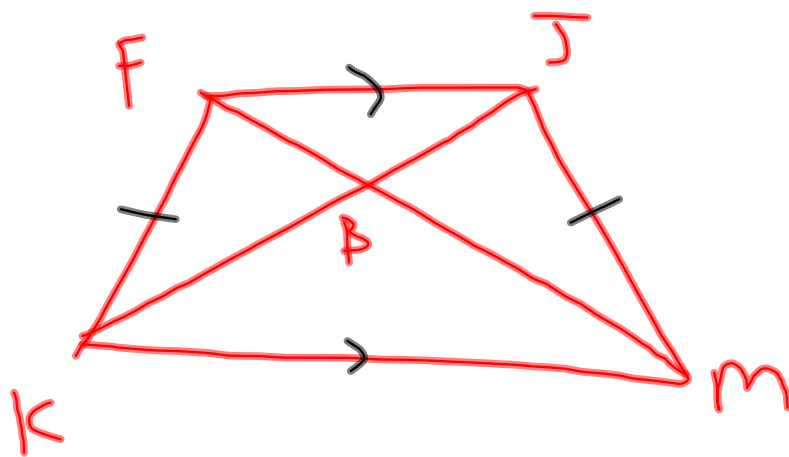
if $\overline{BD} \cong \overline{AC}$, then it's isosceles



$$m\angle A = 80^\circ$$

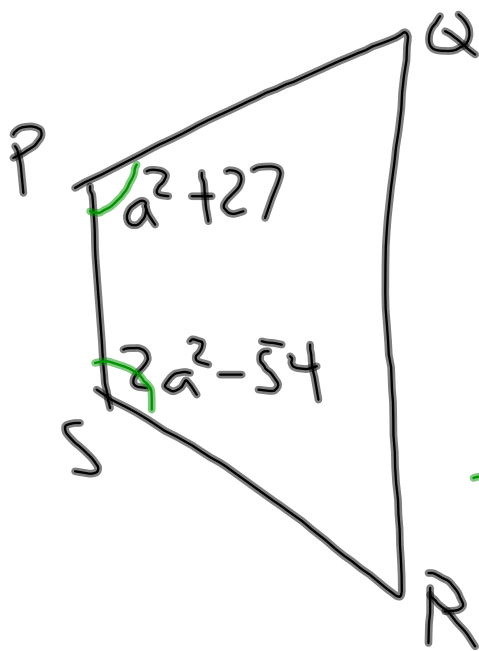
$$100 + 100 + 2x = 360$$

$$x = 80$$



$$KB = -21.9 \quad MF = -32.7$$

$$FB =$$



PQRS is iso.

Find a .

$$a^2 + 27 = 2a^2 - 54$$

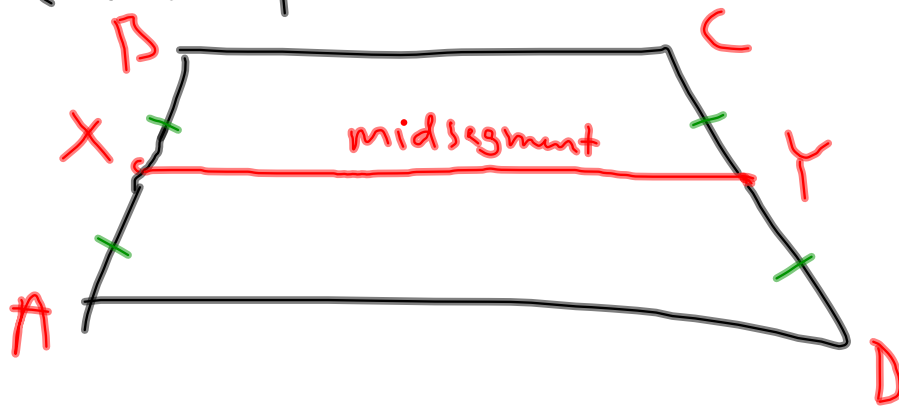
$$\begin{array}{r} -a^2 \\ \hline 27 = a^2 - 54 \\ +54 \qquad \qquad +54 \\ \hline \end{array}$$

$$\sqrt{81} = \sqrt{a^2}$$

$$a = 9 \text{ or } -9$$

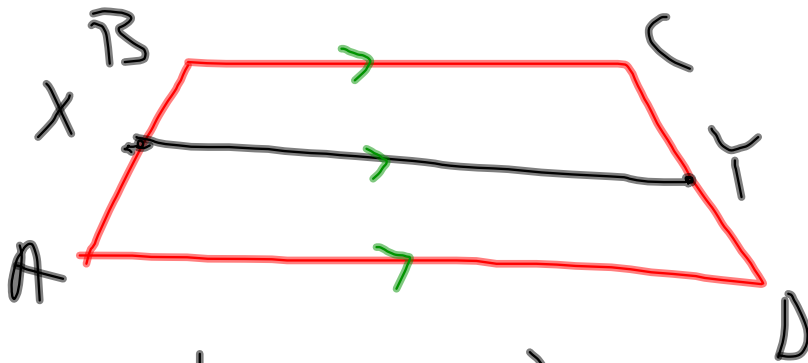
Midsegment of a trapezoid:

Segment whose endpoints are the midpts. of the legs.



Trapezoid midsegment theorem

the midsegment of a trapezoid is \parallel to each base, and the length is $\frac{1}{2}$ the sum of the bases.

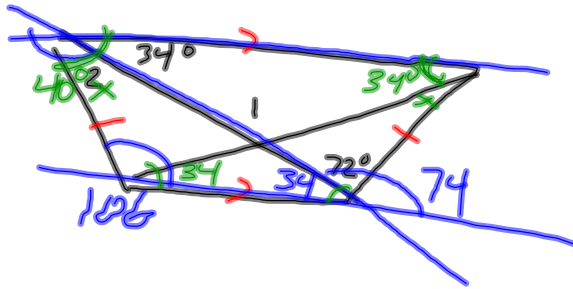


$$XY = \frac{1}{2}(BC + AD)$$

HW:

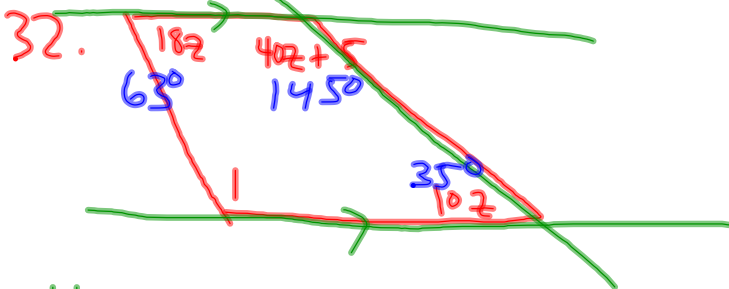
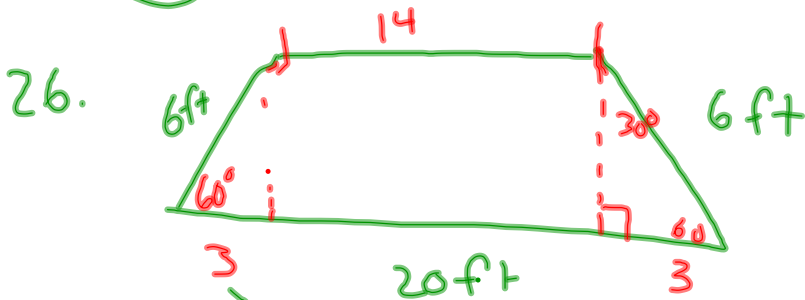
p. 432, 2-36 even
odds extra
credit

30



$$180 - (34 + 34)$$

$$(112^\circ)$$



$$40z + 5 + 10z = 180$$

$$\begin{array}{r} 50z + 5 = 180 \\ -5 \quad -5 \end{array}$$

$$\frac{50z}{50} = \frac{175}{50}$$

$$z = 3.5$$

$$360 - (63 + 35 + 145) = (117^\circ)$$

$$0 - 4 +$$

$$5 - 9 \checkmark$$

$$10 \uparrow -$$