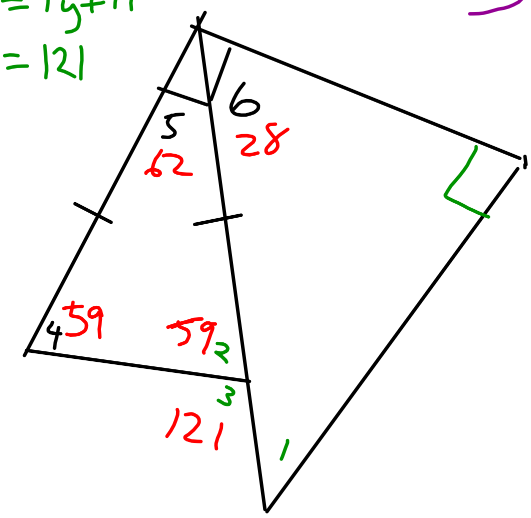
$\angle 1 = 5x+10$
$\angle 2 = 4y+11$
$\angle 3 = 121$

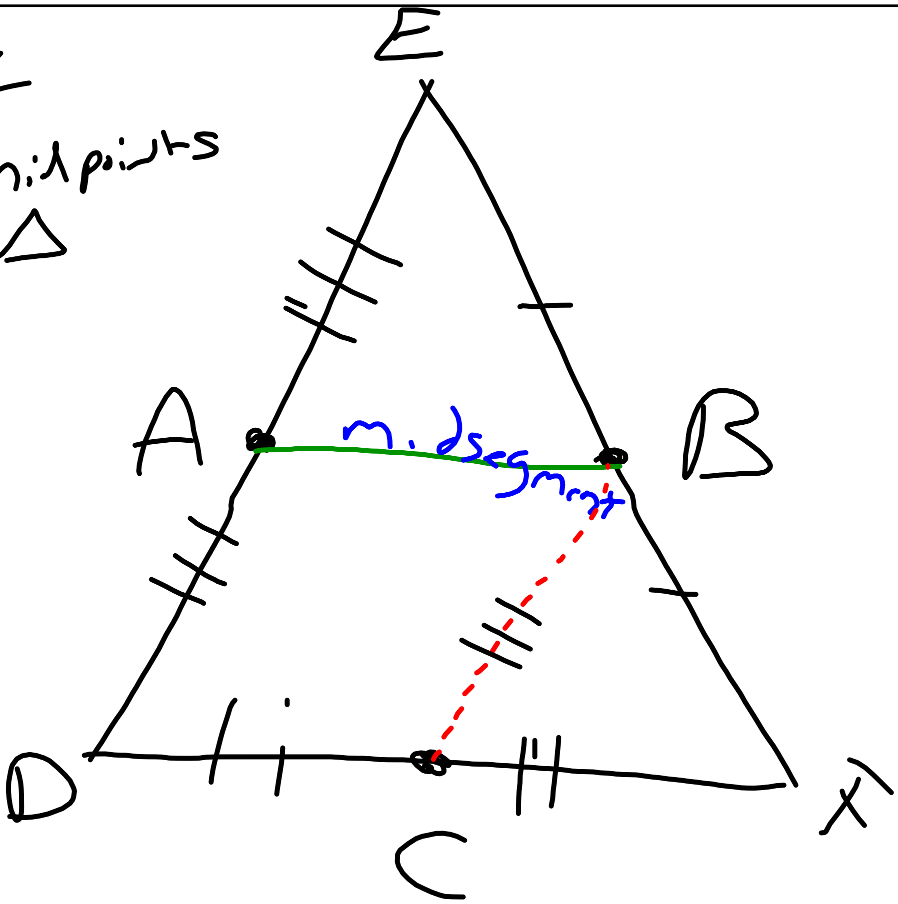


Solve for y and x

Find all angles

$\angle 3 = 121$	G.
$\angle 3 + \angle 2 = 180$	$\angle$. P.
$121 + 4y+11 = 180$	Subst.
$y = 12$	$+ - \div$ prop =
$\angle 2 = 4(12)+11$	Subst.
$\angle 2 = 59$	simpl.
$\angle 4 = \angle 2$	base $\angle$s $\triangle$ =
$\angle 2 + \angle 4 + \angle 5 = 180$	sum int $\angle$s $\triangle$ = 180
$59 + 59 + \angle 5 = 180$	
$\angle 5 = 62$	$-$ prop =
$\angle 5 + \angle 6 = 90$	Defn. comp.
$62 + \angle 6 = 90$	Subst.
$\angle 6 = 28$	$-$ prop =
$\angle 6 + \angle 1 + 90 = 180$	Sum int $\angle$s $\triangle$ = 180
$\angle 1 = 62$	
$5x+10 = 62$	Subst.
$5x = 52$	$-$ prop =
$x = \frac{52}{5}$	$\div$ prop =

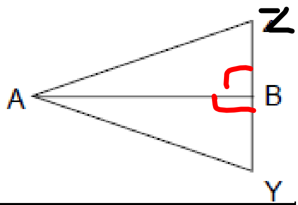
A, B, C
are midpoints
of △



2(midsegments) = Base

EXAMPLE 3: GIVEN: $\overline{BA} \perp \overline{YZ}$; $\overline{AZ} \cong \overline{AY}$; B is the midpoint of $\overline{ZY}$

PROVE: $\Delta AYB \cong \Delta AZB$

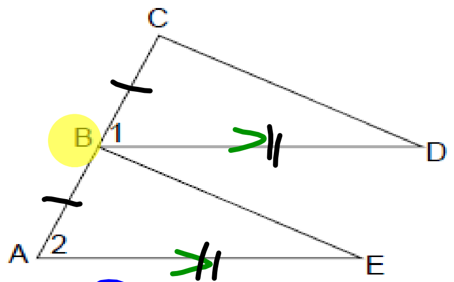


STATEMENTS	REASONS
1. $\overline{BA} \perp \overline{YZ}$	1. Given
2. $\angle YBA$ $\angle ZBA$ are right ∠s	2. Perpendicular Lines form right angles
3. ΔABZ and Δ AYB are right triangles	3. Definition of a right triangle
4. B is the midpoint of $\overline{ZY}$	4. Given
L 5. $\overline{BZ} \cong$ BY	5. Definition of a MidPoint
L 6. $\overline{AB} \cong \overline{AB}$	6. Reflexive
7. ΔABC ≅ ΔEDC	7. LL

QUICK CHECK:

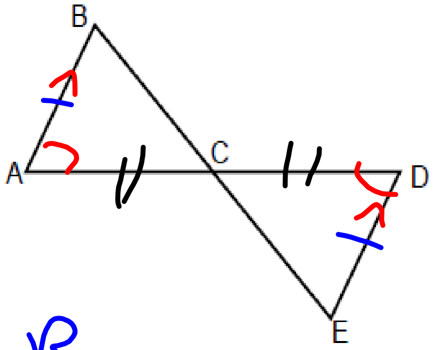
GIVEN: B is the midpoint of $\overline{AC}$; $\overline{BD} \parallel \overline{AE}$;
$\overline{BD} \cong \overline{AE}$

PROVE: $\triangle ABE \cong \triangle BCD$



	S	R
S	B mid $\overline{AC}$	G
	$\overline{AB} \cong \overline{BC}$	midpoint
A	$\overline{BD} \parallel \overline{AE}$	G
	$\angle 2 \cong \angle 1$	correspon
S	$\overline{BD} \cong \overline{AE}$	G
	$\triangle ABE \cong \triangle BCD$	SAS

QUICK CHECK:



GIVEN: $\overline{BA} \cong \overline{ED}$; $\overline{BA} \parallel \overline{ED}$

C is the midpoint of $\overline{AD}$

PROVE: $\Delta BAC \cong \Delta EDC$

	S	R
S	$\overline{BA} \cong \overline{ED}$	G.
	$\overline{BA} \parallel \overline{ED}$	G.
A	$\angle A \cong \angle D$	alt int $\angle$ of //
	C is midpt of $\overline{AD}$	G.
S	$\overline{AC} \cong \overline{CD}$	def. mid pt
	$\underbrace{\Delta \cong \Delta}_{\text{prove}}$	SAS