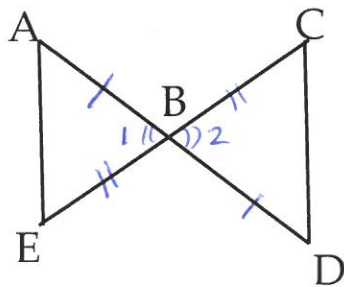


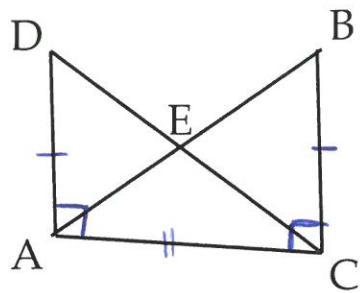
Extra practice problems

Given: \overline{AD} and \overline{CE} bisect each other
 Prove: $\triangle ABE \cong \triangle DBC$



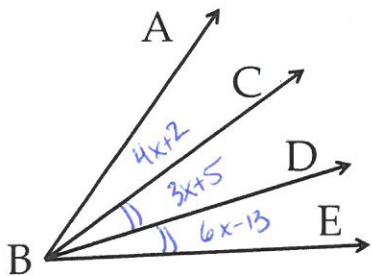
Statement	Reason
1) \overline{AD} & \overline{CE} bisect each other	1) Given
② 2) $\overline{AB} \cong \overline{DB}$	2) def. of seg. bisector
③ 3) $\overline{EB} \cong \overline{CB}$	3) def. of seg. bisector
④ 4) $\angle 1 \cong \angle 2$	4) vert. \angle s thm
⑤ 5) $\triangle ABE \cong \triangle DBC$	5) SAS

Given: $\overline{BC} \perp \overline{AC}$, $\overline{DA} \perp \overline{AC}$, $\overline{DA} \cong \overline{BC}$
 Prove: $\triangle ABC \cong \triangle CDA$



Statement	Reason
1) $\overline{BC} \perp \overline{AC}$	1) Given
2) $\angle BCA$ is right \angle	2) def of perpendicular
3) $\overline{DA} \perp \overline{AC}$	3) Given
4) $\angle DAC$ is right \angle	4) def of \perp
5) $\angle BCA \cong \angle DAC$	5) Right \angle s thm
6) $\overline{DA} \cong \overline{BC}$	6) Given
7) $\overline{AC} \cong \overline{CA}$	7) Reflexive Prop
8) $\triangle ABC \cong \triangle CDA$	8) SAS

\overrightarrow{BD} bisects $\angle CBE$, $m\angle ABC = 4x + 2$, $m\angle CBD = 3x + 5$, $m\angle DBE = 6x - 13$, find $\angle ABE$



$$3x + 5 = 6x - 13$$

$$18 = 3x$$

$$x = 6$$

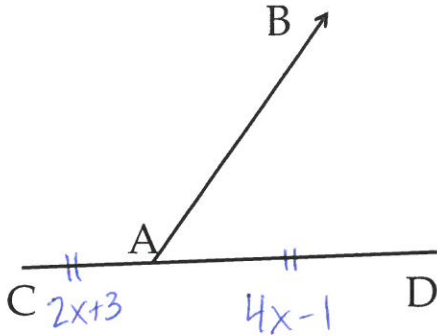
$$4(6) + 2 = 26$$

$$3(6) + 5 = 23$$

$$6(6) - 13 = 23$$

$$\boxed{72^\circ}$$

\overline{AB} bisects \overline{CD} ; $AC = 2x + 3$, $AD = 4x - 1$, find CD



$$2x + 3 = 4x - 1$$

$$4 = 2x$$

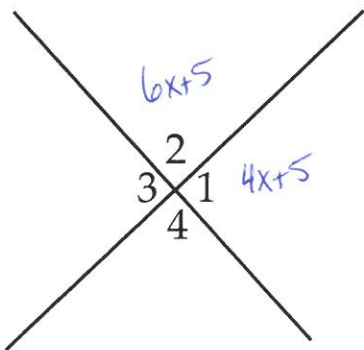
$$2 = x$$

$$AC = 2(2) + 3 = 7$$

$$AD = 4(2) - 1 = 7$$

$$\text{A } \boxed{CD = 14}$$

$m\angle 1 = 4x + 5$, $m\angle 2 = 6x + 5$; find $m\angle 3$



$$4x + 5 + 6x + 5 = 180$$

$$10x + 10 = 180$$

$$10x = 170$$

$$x = 17$$

$$m\angle 1 = 4(17) + 5 = \boxed{73^\circ}$$

$$m\angle 1 = m\angle 3 \text{ (vertical } \angle \text{ s thm)}$$