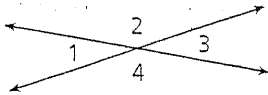


(6)

Given: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$

Prove: $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 4$



① $\angle 1 + \angle 2$ form a linear pair

② $\angle 1 + \angle 2$ are supp.

③ $m\angle 1 + m\angle 2 = 180^\circ$

④ $\angle 1 + \angle 4$ form a linear pair

⑤ $\angle 1 + \angle 4$ are supp.

⑥ $m\angle 1 + m\angle 4 = 180^\circ$

⑦ $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 4$

① def. of linear pair

② linear pair thm.

③ def of supp. \angle 's

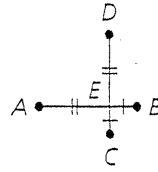
④ def of linear pair

⑤ linear pair thm

⑥ def of supp \angle 's

⑦ subst. prop. of =

①

Given: $\overline{BE} \cong \overline{CE}$, $\overline{DE} \cong \overline{AE}$ Prove: $\overline{AB} \cong \overline{CD}$ 

① $\overline{BE} \cong \overline{CE}$

② $BE = CE$

③ $\overline{DE} \cong \overline{AE}$

④ $DE = AE$

⑤ $AE + EB = AB$

⑥ $DE + CE = AB$

⑦ $DE + CE = DC$

⑧ $AB = DC$

⑨ $\overline{AB} \cong \overline{CD}$

① given

② def of congruence

③ given

④ def of congruence

⑤ segment addition post.

⑥ subst. prop. of =

⑦ segment addition post.

⑧ subst. prop of =

⑨ def of congruence