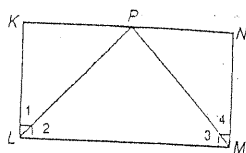


8

Given: $\angle KLM$ and $\angle NML$ are right angles.
 $\angle 2 \cong \angle 3$
Prove: $\angle 1 \cong \angle 4$



- ① $\angle KLM$ + $\angle NML$ are right \angle 's
- ② $\angle KLM \cong \angle NML$
- ③ $m\angle KLM = m\angle NML$
- ④ $m\angle 1 + m\angle 2 = m\angle KLM$
- ⑤ $m\angle 3 + m\angle 4 = m\angle NML$
- ⑥ $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$
- ⑦ $\angle 2 \cong \angle 3$
- ⑧ $m\angle 2 = m\angle 3$
- ⑨ $m\angle 1 + m\angle 3 = m\angle 3 + m\angle 4$
- ⑩ $m\angle 1 = m\angle 4$
- ⑪ $\angle 1 \cong \angle 4$

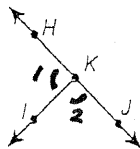
- ① given
- ② Right \angle Congr. Thm
- ③ def of congruence
- ④ angle add. post.
- ⑤ angle add. post.
- ⑥ subst. prop of =
- ⑦ given
- ⑧ def of congruence
- ⑨ subst. prop of =
- ⑩ subtr. prop of =
- ⑪ def of congruence

9

Given: $\angle HKJ$ is a straight \angle .

\overline{KI} bisects $\angle HKJ$.

Prove: $\angle IKJ$ is a right angle.



① $\angle HKJ$ is a str. \angle

② $m\angle HKJ = 180^\circ$

③ \overline{KI} bisects $\angle HKJ$

④ $\angle 1 \cong \angle 2$
 $m\angle 1 = m\angle 2$

⑤ $\angle 1 + \angle 2 = m\angle HKJ$

⑥ $m\angle 2 + m\angle 2 = 180^\circ$

⑦ $2m\angle 2 = 180^\circ$

⑧ $m\angle 2 = 90^\circ$

⑨ $\angle 2$ is a right \angle

① given

② def of str. \angle

③ given

④ def of angle bisector

⑤ angle add. postulate

⑥ subst. prop. of equal.

⑦ Simplify

⑧ Div. Prop. of =

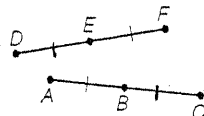
⑨ def of a right \angle

def of \cong

10

Given: $AB = EF$, B is the midpoint of \overline{AC} ,

and E is the midpoint of \overline{DF} .



Prove: $\overline{AC} \cong \overline{DF}$

① $AB = EF$

② B is the m.p. of \overline{AC}

③ $\overline{AB} \cong \overline{BC}$
 $AB = BC$

④ E is the m.p. of \overline{DF}

⑤ $\overline{DE} \cong \overline{EF}$
 $DE = EF$

⑥ $AB + BC = AC$

⑦ $BC = EF$

⑧ $EF + EF = AC$

⑨ $DE + EF = AC$

⑩ $DE + EF = DF$

⑪ $AC = DF$

⑫ $\overline{AC} \cong \overline{DF}$

① given

② given

③ def. of midpoint
 def of \cong

④ given

⑤ def of midpoint
 def of \cong

⑥ segment add. post.

⑦ subst. prop. of =

⑧ subst. prop of =

⑨ subst. prop of =

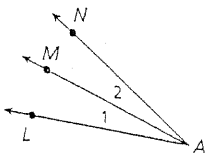
⑩ segment add. post.

⑪ subst. prop of =

⑫ def. of congruence

Given: $m\angle LAN = 30^\circ$, $m\angle 1 = 15^\circ$

Prove: \overline{AM} bisects $\angle LAN$.



① $m\angle LAN = 30^\circ$	① given
② $m\angle 1 + m\angle 2 = m\angle LAN$	② angle add. post.
③ $m\angle 1 = 15^\circ$	③ given
④ $15^\circ + m\angle 2 = m\angle LAN$	④ subst. prop of =
⑤ $15^\circ + m\angle 2 = 30^\circ$	⑤ subst. prop of =
⑥ $m\angle 2 = 15^\circ$	⑥ subtr. prop of =
⑦ $m\angle 1 = m\angle 2$ $\angle 1 \cong \angle 2$	⑦ subst. prop of =
⑧ \overline{AM} bisects $\angle LAN$	⑧ def. of \angle bisector