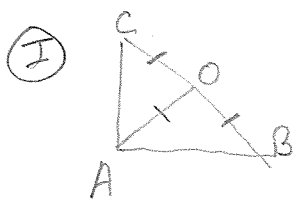


PROOF PRACTICE - DAY 2 ANSWER KEY



① O midpt of \overline{BC} \rightarrow ② $\left. \begin{array}{l} \overline{OC} \cong \overline{OB} \\ \overline{OA} \cong \overline{OB} \end{array} \right\} \rightarrow$ ④ $\overline{OA} \cong \overline{OC} \rightarrow$ ⑤ $\triangle AOC$ is isosceles

① Given

② Def. of midpt.

③ Given

④ Transitive Prop.

⑤ Def. of isosceles. \triangle : A \triangle with 2 sides \cong is an isos. \triangle .

II

① $\left. \begin{array}{l} \overline{PQ} \cong \overline{RS} \\ \overline{QS} \cong \overline{ST} \end{array} \right\} \rightarrow$ ② $\left. \begin{array}{l} PQ = RS \\ QS = ST \end{array} \right\} \rightarrow$ ③ $PQ + QS = RS + ST \rightarrow$ ④ $\left. \begin{array}{l} PQ + QS = PS \\ RS + ST = RT \end{array} \right\}$

⑤ $PS = RT \rightarrow$ ⑥ $\overline{PS} \cong \overline{RT}$

① Given

② Def. of \cong segments

③ Addition Property

④ Segment Addition Postulate

⑤ Substitution Prop.

⑥ Def. of \cong segments

III

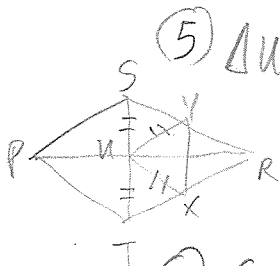
① $\left. \begin{array}{l} D \text{ midpt of } \overline{CE} \\ E \text{ midpt of } \overline{DF} \end{array} \right\} \rightarrow$ ② $\left. \begin{array}{l} \overline{CD} \cong \overline{DE} \\ \overline{DE} \cong \overline{EF} \end{array} \right\} \rightarrow$ ③ $\overline{CD} \cong \overline{EF}$

① Given

② Def. of midpoint

③ Transitive Property

(IV) ① \overline{PR} bisects \overline{ST} \rightarrow ② $\overline{SU} \cong \overline{UT}$
 ③ $\overline{UY} \cong \overline{SU}$ } \rightarrow ④ $\overline{UY} \cong \overline{UT}$
 } \rightarrow ⑥ $\overline{UY} \cong \overline{UX}$



⑤ $\triangle UYX$ equilateral

⑦ $\overline{TU} \cong \overline{UX}$

① Given

② Def of segment bisector

③ Given

④ Transitive property

⑤ Given

⑥ Def of equilateral \triangle : 3 \cong sides.

⑦ Transitive Property

(V)

① $\overleftrightarrow{BC} \perp \overleftrightarrow{AD} \rightarrow$ ② $\angle 1$ complement $\angle 2$
 $\angle 3$ complement $\angle 4$ } \rightarrow ④ $\angle 1 \cong \angle 4$
 ③ $\angle 2 \cong \angle 3$

① Given

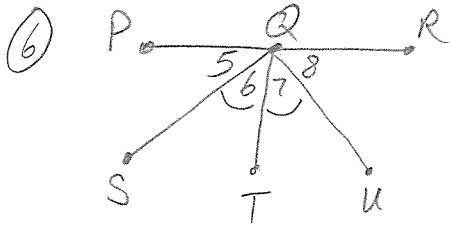
② 2 ext. sides with 2 acute adj. \angle s $\perp \rightarrow$ 2 comple. \angle s.

③ Given

④ 2 \angle s complement $\cong \angle$ s \rightarrow 2 \angle s \cong .

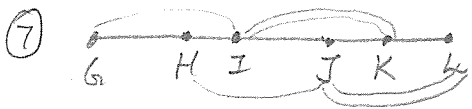
Proofs Practice - Day 2

Answer KEY



- ① $\overline{TQ} \perp \overline{PR} \rightarrow$ ② $\angle 5$ complements $\angle 6$
 $\angle 8$ complements $\angle 7$ } \rightarrow ⑤ $\angle 5 \cong \angle 8$
- ③ \overline{QT} bisects $\angle SQU \rightarrow$ ④ $\angle 6 \cong \angle 7$ }

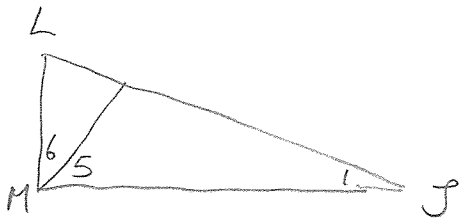
- ① Given
 ② Exterior sides \rightarrow acute adj \angle s \rightarrow 2 Complementary \angle s.
 ③ Given
 ④ Def. of angle bisector
 ⑤ Congruent complements thm



- ① $\overline{GI} \cong \overline{HJ}$ \rightarrow ② $\overline{GH} \cong \overline{IJ}$
 $\overline{IK} \cong \overline{JL}$ $\overline{IJ} \cong \overline{KL}$ } \rightarrow ③ $\overline{GH} \cong \overline{KL}$

- ① Given
 ② Common segments thm: If \cong segmts subtracted from \cong segmts, results \cong .
 ③ Transitive Property

8



- ① $\angle LMS$ is right. \rightarrow ② $m\angle HMJ = 90$
 ③ $\angle 5$ complem. $\angle 1 \rightarrow$ ④ $m\angle 5 + m\angle 1 = 90$
- } \rightarrow ⑤ $m\angle 5 + m\angle 1 = m\angle LMS$
 } ⑥ $m\angle 5 + m\angle 6 = m\angle LMS$
- ⑦ $m\angle 5 + m\angle 1 = m\angle 5 + m\angle 6 \rightarrow$ ⑧ $m\angle 1 = m\angle 6 \rightarrow$ ⑨ $\angle 1 \cong \angle 6$

- | | | |
|------------------------------|-------------------|--------------------------|
| ① Given | ⑤ Substitution | ⑨ Def \cong \angle s |
| ② Def right \angle | ⑥ Angle Add Post. | |
| ③ Given | ⑦ Substitution | |
| ④ Def complement \angle s. | ⑧ Subtraction | |

- ⑨ ① \overline{EF} bisects $\angle AXB \rightarrow$ ② $\angle 1 \cong \angle 2$
 ③ $\angle 1 \cong \angle 4$
- } \rightarrow ④ $\angle 2 \cong \angle 4$
 } ⑤ $\angle 2 \cong \angle 3$
- } \rightarrow ⑥ $\angle 3 \cong \angle 4$
 } \rightarrow ⑦ \overline{EF} bisects $\angle CXD$.

- ① Given
- ② Def of \angle bisector
- ③ Vertical \angle s \cong .
- ④ Transitive
- ⑤ Vertical \angle s \cong
- ⑥ Transitive
- ⑦ Def of \angle bisector.