

Practice on Proofs #2

Name _____

Period _____

1.

GIVEN $\rightarrow m\angle 3 = 40^\circ, \angle 1 \cong \angle 2, \angle 2 \cong \angle 3$

PROVE $\rightarrow m\angle 1 = 40^\circ$

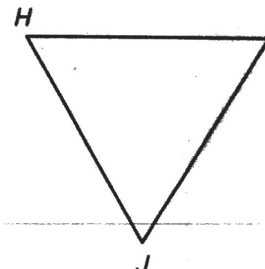


Statements	Reasons
1. $m\angle 3 = 40^\circ, \angle 1 \cong \angle 2, \angle 2 \cong \angle 3$	1. _____
2. $\angle 1 \cong \angle 3$	2. _____
3. $m\angle 1 = m\angle 3$	3. _____
4. $m\angle 1 = 40^\circ$	4. _____

2.

GIVEN: $HI = 9, IJ = 9, \overline{IJ} \cong \overline{JH}$

PROVE: $\overline{HI} \cong \overline{JH}$



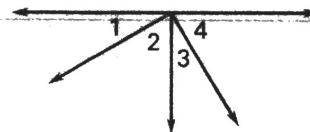
Statements	Reasons
1. $HI = 9$	1. _____
2. $IJ = 9$	2. _____
3. $HI = IJ$	3. _____
4. _____	4. Definition of congruent segments
5. $\overline{IJ} \cong \overline{JH}$	5. _____
6. $\overline{HI} \cong \overline{JH}$	6. _____

3.

GIVEN: $\angle 1$ and $\angle 2$ are complementary.

$\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$

PROVE: $\angle 3$ and $\angle 4$ are complementary.



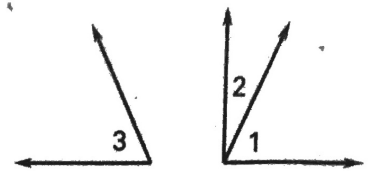
Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary.	1. _____
2. $m\angle 1 + m\angle 2 = 90^\circ$	2. _____
3. $\angle 1 \cong \angle 3, \angle 2 \cong \angle 4$	3. _____
4. $m\angle 1 = m\angle 3, m\angle 2 = m\angle 4$	4. _____
5. $m\angle 3 + m\angle 2 = 90^\circ$	5. _____
6. $m\angle 3 + m\angle 4 = 90^\circ$	6. _____
7. $\angle 3$ and $\angle 4$ are complementary.	7. _____

GIVEN: $\angle 3$ and $\angle 2$ are complementary.

$$m\angle 1 + m\angle 2 = 90^\circ$$

4.

PROVE: $\angle 3 \cong \angle 1$



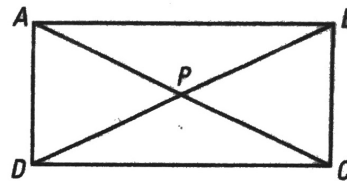
Statements	Reasons
1. $\angle 3$ and $\angle 2$ are complementary.	1. _____
2. $m\angle 1 + m\angle 2 = 90^\circ$	2. _____
3. $m\angle 3 + m\angle 2 = 90^\circ$	3. _____
4. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 2$	4. _____
5. $m\angle 1 = m\angle 3$	5. _____
6. $\angle 1 \cong \angle 3$	6. _____

5.

GIVEN $\triangleright \overline{PD} \cong \overline{PC}$,

P is the midpoint of \overline{AC} and \overline{BD}

PROVE $\triangleright \overline{AP} \cong \overline{BP}$



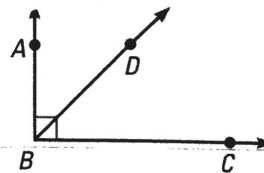
Statements	Reasons
1. P is the midpoint of \overline{AC} and \overline{BD} .	1. _____
2. $AP = PC$	2. _____
3. $BP = PD$	3. _____
4. _____	4. Given
5. $PD = PC$	5. _____
6. _____	6. Transitive property of equality
7. $\overline{AP} \cong \overline{BP}$	7. Definition of congruent segments

6.

GIVEN $\triangleright \overline{AB} \perp \overline{BC}$,

\overline{BD} bisects $\angle ABC$

PROVE $\triangleright m\angle ABD = 45^\circ$



Statements	Reasons
1. $\overline{AB} \perp \overline{BC}$	1. _____
2. _____	2. Definition of perpendicular lines
3. $m\angle ABC = 90^\circ$	3. _____
4. \overline{BD} bisects $\angle ABC$	4. _____
5. $m\angle ABD = m\angle DBC$	5. _____
6. $m\angle ABD + m\angle DBC = 90^\circ$	6. _____
7. $m\angle ABD + \underline{\hspace{1cm}} = 90^\circ$	7. Substitution property of equality
8. $2(m\angle ABD) = 90^\circ$	8. Math Fact
9. $m\angle ABD = 45^\circ$	9. _____