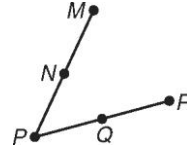


SECTION 2.6 WORKSHEET – DAY 2

1) Write a justification for each step.

Given: N is the midpoint of \overline{MP} , Q is the midpoint of \overline{RP} , and $\overline{PQ} \cong \overline{NM}$.



Prove: $\overline{PN} \cong \overline{QR}$

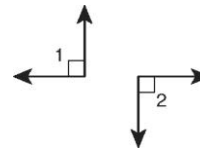
Proof:

- | | |
|---|----------|
| 1. N is the midpoint of \overline{MP} . | 1. _____ |
| 2. Q is the midpoint of \overline{RP} . | 2. _____ |
| 3. $\overline{PN} \cong \overline{NM}$ | 3. _____ |
| 4. $\overline{PQ} \cong \overline{NM}$ | 4. _____ |
| 5. $\overline{PN} \cong \overline{PQ}$ | 5. _____ |
| 6. $\overline{PQ} \cong \overline{QR}$ | 6. _____ |
| 7. $\overline{PN} \cong \overline{QR}$ | 7. _____ |

Fill in the blanks to complete the two-column proof.

2. **Given:** $\angle 1$ and $\angle 2$ are right angles.

Prove: $\angle 1 \cong \angle 2$

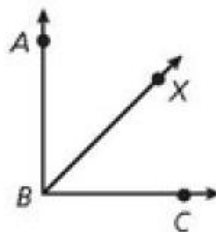


Proof:

Statements	Reasons
1. a. _____	1. Given
2. $m\angle 1 = 90^\circ$	2. b. _____
3. c. _____	3. Definition of right angle
4. $m\angle 1 = m\angle 2$	4. d. _____
5. e. _____	5. Definition of congruent angles

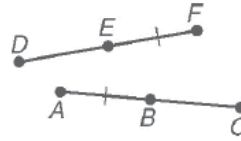
3) Write a justification for each step, given that \overrightarrow{BX} bisects $\angle ABC$ and $m\angle XBC = 45^\circ$.

- \overrightarrow{BX} bisects $\angle ABC$.
- $\angle ABX \cong \angle XBC$
- $m\angle ABX = m\angle XBC$
- $m\angle XBC = 45^\circ$
- $m\angle ABX = 45^\circ$
- $m\angle ABX + m\angle XBC = m\angle ABC$
- $45^\circ + 45^\circ = m\angle ABC$
- $90^\circ = m\angle ABC$
- $\angle ABC$ is a right angle.



Write a justification for each step.

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



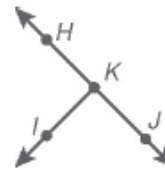
1. B is the midpoint of \overline{AC} ,
and E is the midpoint of \overline{DF} .
2. $\overline{AB} \cong \overline{BC}$, and $\overline{DE} \cong \overline{EF}$.
3. $AB = BC$, and $DE = EF$.
4. $AB + BC = AC$, and $DE + EF = DF$.
5. $2AB = AC$, and $2EF = DF$.
6. $AB = EF$
7. $2AB = 2EF$
8. $AC = DF$
9. $\overline{AC} \cong \overline{DF}$

Fill in the blanks to complete the two-column proof.

10. Given: $\angle HKJ$ is a straight angle.
 \overline{KI} bisects $\angle HKJ$.

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

Proof:



Statements	Reasons
1. a. _____	1. Given
2. $m\angle HKJ = 180^\circ$	2. b. _____
3. c. _____	3. Given
4. $\angle IKJ \cong \angle IKH$	4. Def. of \angle bisector
5. $m\angle IKJ = m\angle IKH$	5. Def. of $\cong \angle$
6. d. _____	6. \angle Add. Post.
7. $2m\angle IKJ = 180^\circ$	7. e. Subst. (Steps _____)
8. $m\angle IKJ = 90^\circ$	8. Div. Prop. of =
9. $\angle IKJ$ is a right angle.	9. f. _____