Geometry Quiz
2.4-2.7 Proof Quiz

Name: KEY
Hour: ____

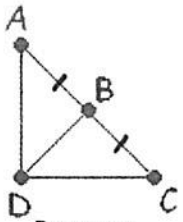
Choose reasons from the following list for #1 - 12

Given	Substitution Property	Subtraction Property
Segment Addition Postulate	Angle Addition Postulate	Def. of angle bisector
Def. of Midpoint	Transitive Property	Def. of congruent
Def. of complementary	Simplify	Addition Property
Def of supplementary	Def. of Right Angle	

1. Given: K is between J and L. JK = 6, KL = 10
Prove: JL = 16

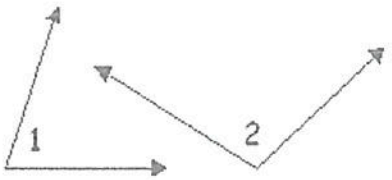
Statements	Reasons
1. K is between J and L	1. given
2. JK = 6, KL = 10	2. given
3. JL = JK + KL	3. segment addition postulate
4. JL = 6 + 10	4. substitution property
5. JL = 16	5. addition property

2. Given: B is the midpoint of $\overline{AC}$. $\overline{BD} \cong \overline{AB}$
Prove: $\overline{BD} \cong \overline{BC}$



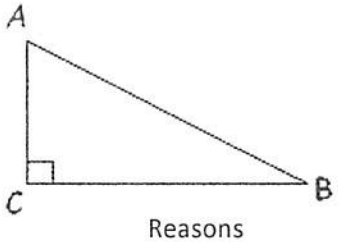
Statements	Reasons
1. $\overline{BD} \cong \overline{AB}$	1. given
2. B is the midpoint of $\overline{AC}$	2. given
3. $\overline{AB} \cong \overline{BC}$	3. def. of midpoint
4. $\overline{BD} \cong \overline{BC}$	4. transitive prop of $\cong$

3. Given: m ∠1 = 75°; m ∠2 = 105°
Prove: ∠1 and ∠2 are supplementary



Statements	Reasons
1. m ∠1 = 75°; m ∠2 = 105°	1. given
2. m ∠1 + m ∠2 = 75° + 105°	2. addition property
3. m ∠1 + m ∠2 = 180°	3. simplify
4. ∠1 and ∠2 are supplementary	4. def of supplementary

4. Given: ΔABC with ∠C a right angle
∠A and ∠B are complementary
Prove: m ∠A + m ∠B + m ∠C = 180°

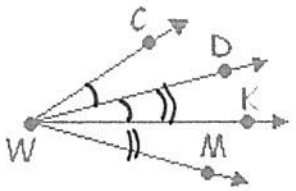


Statements	Reasons
1. ∠A and ∠B are complementary	1. given
2. m ∠A + m ∠B = 90°	2. def of complementary
3. ∠C a right angle	3. given
4. m ∠C = 90°	4. def of right ∠
5. m ∠A + m ∠B + m ∠C = 180°	5. addition property

5. Given: R, J, and K are collinear
RJ = 3, RK = 8
Prove: JK = 5

Statements	Reasons
1. R, J, and K are collinear, RJ = 3, RK = 8	1. given
2. RJ + JK = RK	2. Segment addition postulate
3. 3 + JK = 8	3. substitution
4. JK = 5	4. subtraction

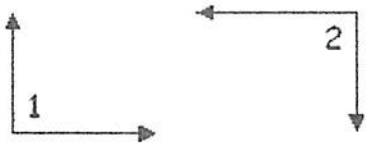
6. Given: $\overrightarrow{WD}$ bisects ∠CWK; $\overrightarrow{WK}$ bisects ∠DWM



Prove: ∠CWD ≅ ∠KWM

Statements	Reasons
1. $\overrightarrow{WD}$ bisects ∠CWK; $\overrightarrow{WK}$ bisects ∠DWM	1. given
2. ∠CWD ≅ ∠DWK	2. def of ∠ bisector
3. ∠DWK ≅ ∠KWM	3. def of ∠ bisector
4. ∠CWD ≅ ∠KWM	4. transitive property of ≅

7. Given: ∠1 and ∠2 are right angles
Prove: ∠1 ≅ ∠2



Statements	Reasons
1. ∠1 and ∠2 are right angles	1. given
2. m ∠1 = 90; m ∠2 = 90	2. def of right ∠'s
3. m ∠1 = m ∠2	3. transitive prop. of =
4. ∠1 ≅ ∠2	4. def of ≅ ∠'s

For #8 – 12, rewrite the statements in the correct order and then supply the reasons.

8. Given: RS = 8; RT = 34
Prove: ST = 26

Statements	Reasons
1. RS=8; RT=34	1. given
2. RS+ST=RT	2. segment addition postulate
3. 8+ST=34	3. substitution
4. ST=26	4. subtraction
X.	X.

~~8 + ST = 34~~	ST = 26	~~RS + ST = RT~~	~~RS = 8~~	~~RT = 34~~

9. Given: ∠C and ∠B are complementary; m ∠C = 50°
Prove: m ∠B = 40°

Statements	Reasons
1. ∠C and ∠B are comp; m∠C = 50°	1. given
2. m∠C + m∠B = 90°	2. def of complementary
3. 50 + m∠B = 90	3. substitution
4. m∠B = 40°	4. subtraction

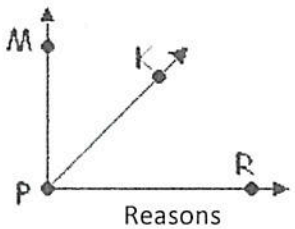
~~m ∠C + m ∠B = 90°~~	~~m ∠B = 40°~~	~~50° + m ∠B = 90°~~
~~∠C and ∠B are complementary; m ∠C = 50°~~		

10. Given: ∠A and ∠B are supplementary
∠C and ∠B are supplementary
Prove: ∠A ≅ ∠C

Statements	Reasons
1. ∡A + ∡B are supp	1. given
2. ∡C + ∡B are supp m∡A + m∡B = 180°	2. def of supp.
3. m∡C + m∡B = 180°	3. def of supp.
4. m∡A + m∡B = m∡C + m∡B	4. Substitution
5. m∡A = m∡C	5. Subtraction
6. ∡A ≅ ∡C	6. Def of ≅ ∡'s

m ∠A + m ∠B = m ∠C + m ∠B	∠A ≅ ∠C	m ∠A = m ∠C
m ∠A + m ∠B = 180, m ∠C + m ∠B = 180		
∠A and ∠B are supplementary ∠C and ∠B are supplementary		

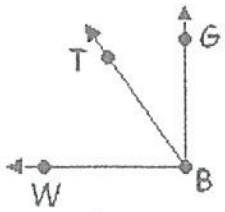
11. Given: ∠MPR is a right angle
Prove: ∠MPK and ∠KPR are complementary



Statements	Reasons
1. ∡MPR is a right angle	1. given
2. m∡MPR = 90	2. def of right ∡
3. m∡MPK + m∡KPR = m∡MPR	3. Angle Addition Postulate
4. m∡MPK + m∡KPR = 90°	4. Substitution
5. ∡MPK + ∡KPR are comp	5. Def of complementary

m ∠MPR = 90°	m ∠MPK + m ∠KPR = 90°	∠MPR is a right angle
∠MPK and ∠KPR are complementary	m ∠MPK + m ∠KPR = m ∠MPR	

12. Given: ∠GBW is a right angle; m ∠GBT = 35°
Prove: m ∠TBW = 55°



Statements	Reasons
1. ∠GBW is right angle	1. given
2. m∡GBT = 35°	2. given
3. m∡GBW = 90°	3. def of right angle
4. m∡GBT + m∡TBW = m∡GBW	4. Angle Addition Postulate
5. 35° + m∡TBW = 90°	5. substitution
6. m∡TBW = 55°	6. subtraction

∠GBW is a ~~right~~ angle	m ∠GBT + m ∠TBW = m ∠GBW
m ∠~~GBT = 35°~~	m ∠TBW = 55°
m ∠~~GBW = 90°~~	35° + m ∠TBW = 90°