

Choose reasons from the following list.

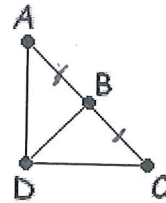
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|----------------------------|----------------------------|-----------------------------------------|
| Given | Substitution Property | Subtraction Property |
| Segment Addition Postulate | Angle Addition Postulate | Def. of Angle Bisector |
| Def. of Midpoint | Transitive Property | Def. of Congruent |
| Def. of Complementary | Def. of Right Angle | Addition Property |
| Def. of Supplementary | Substitution (Simplifying) | Symmetric Property |
| Reflexive Property | Vertical Angles Theorem | Supplement Thm. (Linear Pair is Suppl.) |

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



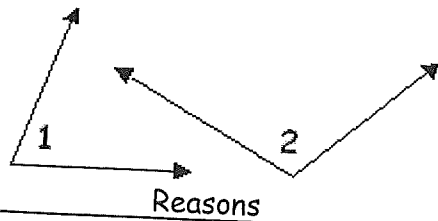
Statements	Reasons
1. K is between J and L	1. <u>Given</u>
2. JK = 6, KL = 10	2. <u>Given</u>
3. JL = JK + KL	3. <u>Segment Addition Postulate</u>
4. JL = 6 + 10	4. <u>Substitution Property</u>
5. JL = 16	5. <u>Substitution (Simplifying)</u>

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



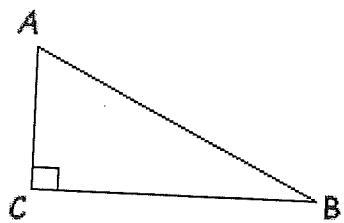
Statements	Reasons
1. $\overline{BD} \cong \overline{AB}$	1. <u>Given</u>
2. B is the midpoint of \overline{AC}	2. <u>Given</u>
3. $\overline{AB} \cong \overline{BC}$	3. <u>Definition of Midpoint</u>
4. $\overline{BD} \cong \overline{BC}$	4. <u>Transitive Property</u>

3. Given: $m \angle 1 = 75$; $m \angle 2 = 105$
 Prove: $\angle 1$ and $\angle 2$ are supplementary



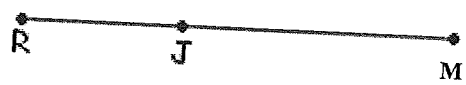
Statements	Reasons
1. $m \angle 1 = 75$; $m \angle 2 = 105$	1. <u>Given</u>
2. $m \angle 1 + m \angle 2 = 75 + 105$	2. <u>Substitution</u>
3. $m \angle 1 + m \angle 2 = 180$	3. <u>Substitution (Simplifying)</u>
4. $\angle 1$ and $\angle 2$ are supplementary	4. <u>Def. of supp \angle's</u>

4. Given: $\triangle ABC$ with $\angle C$ a right angle
 $\angle A$ and $\angle B$ are complementary
 Prove: $m \angle A + m \angle B + m \angle C = 180$



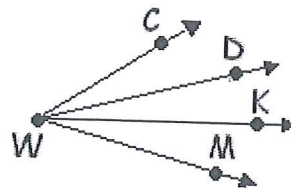
Statements	Reasons
1. $\angle A$ and $\angle B$ are complementary	1. <u>Given</u>
2. $m \angle A + m \angle B = 90$	2. <u>Def. of complementary \angle's</u>
3. $\angle C$ a right angle	3. <u>Given</u>
4. $m \angle C = 90$	4. <u>Definition of right \angle's</u>
5. $m \angle A + m \angle B + m \angle C = 180$	5. <u>Addition Property</u>

5. Given: R, J, and M are collinear
 $RJ = 3$, $RM = 8$
 Prove: $JM = 5$



Statements	Reasons
1. R, J, and M are collinear $RJ = 3$, $RM = 8$	1. <u>Given</u>
2. $RJ + JM = RM$	2. <u>Segment Addition Postulate</u>
3. $3 + JM = 8$	3. <u>Substitution Property</u>
4. $JM = 5$	4. <u>Subtraction Property</u>

6. Given: \overline{WD} bisects $\angle CWK$; \overline{WK} bisects $\angle DWM$
 Prove: $\angle CWD \cong \angle KWM$



Statements	Reasons
1. \overline{WD} bisects $\angle CWK$ \overline{WK} bisects $\angle DWM$	1. <u>Given</u>
2. $\angle CWD \cong \angle DWK$	2. <u>Definition of \angle Bisector</u>
3. $\angle DWK \cong \angle KWM$	3. <u>Definition of \angle Bisector</u>
4. $\angle CWD \cong \angle KWM$	4. <u>Transitive Property</u>

7. Given: $\angle 1$ and $\angle 2$ are right angles
 Prove: $\angle 1 \cong \angle 2$



Statements	Reasons
1. $\angle 1$ and $\angle 2$ are right angles	1. <u>Given</u>
2. $m \angle 1 = 90$; $m \angle 2 = 90$	2. <u>Definition of right \angle's</u>
3. $m \angle 1 = m \angle 2$	3. <u>Transitive Property</u>
4. $\angle 1 \cong \angle 2$	4. <u>Definition of $\cong \angle$'s</u>

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. $RS = 8$	1. <u>Given</u>
2. $RT = 34$	2. <u>Given</u>
3. $RS + ST = RT$	3. <u>Segment Addition Postulate</u>
4. $8 + ST = 34$	4. <u>Substitution</u>
5. $ST = 26$	5. <u>Subtraction</u>

$8 + ST = 34$	$ST = 26$	$RS + ST = RT$	$RS = 8$	$RT = 34$
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9. Given: $\angle C$ and $\angle B$ are complementary; $m\angle C = 50$
 Prove: $m\angle B = 40$

Statements	Reasons
1. $\angle C$ and $\angle B$ are Comp. $\therefore m\angle C = 50$	1. Given
2. $m\angle C + m\angle B = 90$	2. Definition of comp. \angle 's
3. $50 + m\angle B = 90$	3. Substitution
4. $m\angle B = 40$	4. Subtraction

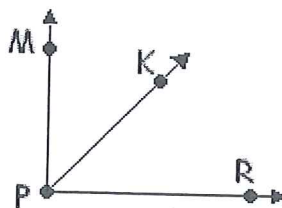
$m\angle C + m\angle B = 90$	$m\angle B = 40$	$50 + m\angle B = 90$
$\angle C$ and $\angle B$ are complementary; $m\angle C = 50$		

10. Given: $\angle A$ and $\angle B$ are supplementary
 $\angle C$ and $\angle B$ are supplementary
 Prove: $\angle A \cong \angle C$

Statements	Reasons
1. $\angle A$ and $\angle B$ are Supplementary $\angle B$ and $\angle C$ are Supplementary	1. Given
2. $m\angle A + m\angle B = 180$ $m\angle C + m\angle B = 180$	2. Definition of supplementary \angle 's
3. $m\angle A + m\angle B = m\angle C + m\angle B$	3. Transitive
4. $m\angle A = m\angle C$	4. Subtraction
5. $\angle A \cong \angle C$	5. Definition of $\cong \angle$'s

$m\angle A + m\angle B = m\angle C + m\angle B$	$\angle A \cong \angle C$	$m\angle A = m\angle C$
\rightarrow $m\angle A + m\angle B = 180$, $m\angle C + m\angle B = 180$		
$\angle A$ and $\angle B$ are supplementary $\angle C$ and $\angle B$ are supplementary		

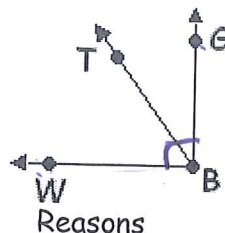
11. Given: $\angle MPR$ is a right angle
 Prove: $\angle MPK$ and $\angle KPR$ are complementary



Statements	Reasons
1. $\angle MPR$ is a right \angle	1. Given
2. $\angle MPR = 90$	2. Definition of right \angle 's
3. $\angle MPK + \angle KPR = \angle MPR$	3. Angle addition Postulate
4. $m\angle MPK + m\angle KPR = 90$	4. Substitution
5. $\angle MPK$ and $\angle KPR$ are complementary	5. Definition of Complementary \angle 's

$m\angle MPR = 90$	$m\angle MPK + m\angle KPR = 90$	$\angle MPR$ is a right angle
$\angle MPK$ and $\angle KPR$ are complementary	$m\angle MPK + m\angle KPR = m\angle MPR$	

12. Given: $\angle GBW$ is a right angle; $m\angleGBT = 35$
 Prove: $m\angleTBW = 55$



Statements	Reasons
1. $\angle GBW$ is a right \angle	1. Given
2. $m\angleGBT = 35$	2. Given
3. $m\angle GBW = 90$	3. Definition of right \angle 's
4. $m\angleGBT + m\angleTBW = m\angle GBW$	4. Angle addition Postulate
5. $35 + m\angleTBW = 90$	5. Substitution
6. $m\angleTBW = 55$	6. Subtraction

$\angle GBW$ is a right angle	$m\angleGBT + m\angleTBW = m\angle GBW$
$m\angleGBT = 35$	$m\angleTBW = 55$
$m\angle GBW = 90$	$35 + m\angleTBW = 90$