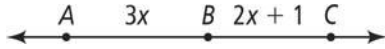


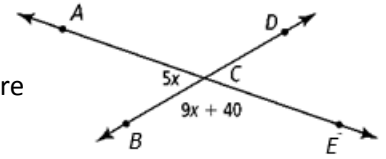
Fill in the missing reasons for each proof.

1. **Given:** $AC = 31$
Prove: $x = 6$



Statements	Reasons
1. $AC = 31$	1. _____
2. $AB + BC = AC$	2. _____
3.	3. Substitution
4. $5x + 1 = 31$	4. _____
5. $5x = 30$	5. _____
6. $x = 6$	6. _____

2. **Given:** $\angle ACB$ and $\angle BCE$ are a linear pair
Prove: $x = 10$



Statements	Reasons
1. $\angle ACB$ and $\angle BCE$ are a linear pair	1. _____
2. $\angle ACB$ and $\angle BCE$ are supplementary	2. _____
3. $m\angle ACB + m\angle BCE = 180$	3. _____
4. _____	4. Substitution
5. $14x + 40 = 180$	5. _____
6. $14x = 140$	6. _____
7. $x = 10$	7. _____

3. **Given:** $\overline{AL} \cong \overline{SK}$
Prove: $\overline{AS} \cong \overline{LK}$



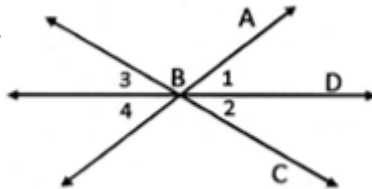
Statements	Reasons
1. $\overline{AL} \cong \overline{SK}$	1. _____
2. _____	2. Def of \cong seg
3. $LS = LS$	3. _____
4. $AL + LS = SK + LS$	4. _____
5. $AL + LS = AS$	5. _____
6. _____	6. Segment Add Post
7. $AS = LK$	7. _____
8. $\overline{AS} \cong \overline{LK}$	8. _____

4. **Given:** $\overline{FR} \cong \overline{AN}$
Prove: $\overline{FA} \cong \overline{RN}$



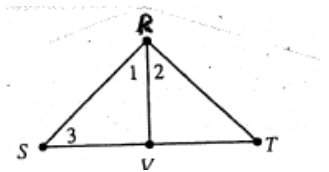
Statements	Reasons
1. $\overline{FR} \cong \overline{AN}$	1. _____
2. $FR = AN$	2. _____
3. $RA = RA$	3. _____
4. _____	4. Addition POE
5. $FR + RA = FA$	5. _____
6. _____	6. Segment Add Post
7. $FA = RN$	7. _____
8. _____	8. Def \cong segments

5. **Given:** \overrightarrow{BD} bisects $\angle ABC$
Prove: $\angle 3 \cong \angle 4$



Statements	Reasons
1. \overrightarrow{BD} bisects $\angle ABC$	1. _____
2. _____	2. Def \angle Bisector
3. $\angle 2 \cong \angle 3, \angle 1 \cong \angle 4$	3. _____
4. $\angle 1 \cong \angle 3$	4. _____
5. $\angle 3 \cong \angle 4$	5. _____

6. **Given:** \overrightarrow{RV} bisects $\angle SRT$
 $\angle 3 \cong \angle 1$
Prove: $\angle 3 \cong \angle 2$



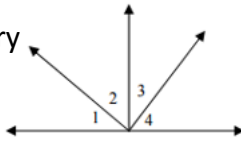
Statements	Reasons
1. \overrightarrow{RV} bisects $\angle SRT$	1. _____
2. $\angle 1 \cong \angle 2$	2. _____
3. $\angle 3 \cong \angle 1$	3. _____
4. $\angle 3 \cong \angle 2$	4. _____

7. **Given:** $\angle 1$ and $\angle 2$ are complementary

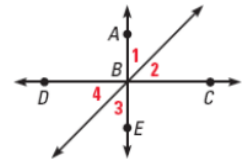
$$\angle 1 \cong \angle 3$$

$$\angle 2 \cong \angle 4$$

Prove: $\angle 3$ and $\angle 4$ are complementary



8. **Given:** $\angle 1$ and $\angle 4$ are complementary



Prove: $\angle 2$ and $\angle 3$ are complementary

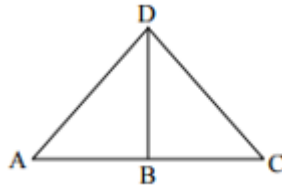
Statements	Reasons	Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary	1. _____	1. $\angle 1$ and $\angle 4$ are complementary	1. _____
2. $m\angle 1 + m\angle 2 = 90$	2. _____	2. _____ and _____	2. VAT
3. _____ and _____	3. Given	3. $m\angle 1 = m\angle 3$ and $m\angle 2 = m\angle 4$	3. _____
4. $m\angle 1 = m\angle 3$ and $m\angle 2 = m\angle 4$	4. _____	4. $\angle 2$ and $\angle 3$ are complementary	4. _____
5. _____	5. Substitution		
6. $\angle 3$ and $\angle 4$ are complementary	6. _____		

9. **Given:** $\angle A$ is complementary to $\angle ADB$

$\angle C$ is complementary to $\angle CDB$

\overline{DB} bisects $\angle ADC$

Prove: $\angle A \cong \angle C$



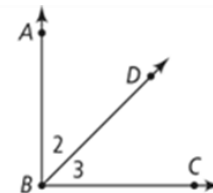
Statements	Reasons
1. $\angle A$ is complementary to $\angle ADB$ $\angle C$ is complementary to $\angle CDB$ \overline{DB} bisects $\angle ADC$	1. _____
2. $\angle ADB \cong \angle CDB$	2. _____
3. $m\angle ADB = m\angle CDB$	3. _____
4. _____	4. Substitution
5. $\angle A \cong \angle C$	5. _____

10. **Given:** $\angle 1$ and $\angle 2$ are complementary

$\angle 2$ and $\angle 3$ are complementary

\overline{BD} bisects $\angle ABC$

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



Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary $\angle 2$ and $\angle 3$ are complementary	1. _____
2. $\angle 1 \cong \angle 3$	2. _____
3. _____	3. Given
4. $\angle 2 \cong \angle 3$	4. _____
5. $\angle 1 \cong \angle 2$	5. _____