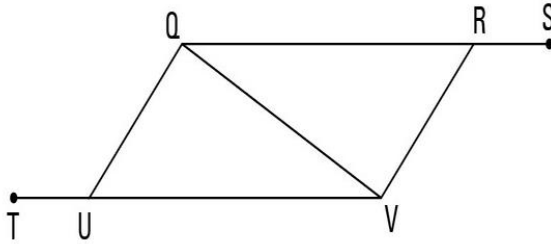


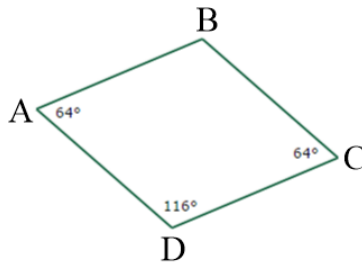
1. Given: $\angle UQV \cong \angle RVQ$
 $\angle TUQ \cong \angle SRV$

Prove: $QRVU$ is a parallelogram



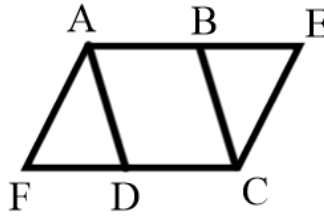
Statement	Reason
1. $\angle UQV \cong \angle RVQ$ $\angle TUQ \cong \angle SRV$	1.
2. $m\angle TUQ + m\angle QUV = 180^\circ$ $m\angle SRV + m\angle QRV = 180^\circ$	2.
3. $m\angle TUQ + m\angle QUV = m\angle SRV + m\angle QRV$	3.
4. $m\angle TUQ + m\angle QUV = m\angle TUQ + m\angle QRV$	4.
5. $m\angle QUV \cong m\angle QRV$	5.
6. $\overline{QV} \cong \overline{QV}$	6.
7. $\triangle UQV \cong \triangle RVQ$	7.
8. $\overline{UQ} \cong \overline{RV}$, $\overline{UV} \cong \overline{RQ}$	8.
9. $QRVU$ is a parallelogram	9.

2. Given: $m\angle A = m\angle C = 64^\circ$
 $m\angle D = 116^\circ$
 Prove: $ABCD$ is a parallelogram



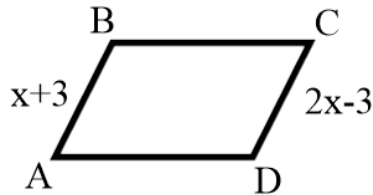
Statement	Reason
1. $m\angle A = m\angle C = 64^\circ$, $m\angle D = 116^\circ$	1.
2. $\angle A$ and $\angle D$ are supplementary	2.
3. $\overline{AB} \parallel \overline{DC}$	3.
4. $\angle D$ and $\angle C$ are supplementary	4.
5. $\overline{AD} \parallel \overline{BC}$	5.
6. $ABCD$ is a parallelogram	6.

3. Given: $\overline{FD} \cong \overline{BE}$
 $AECF$ is a parallelogram
 Prove: $\overline{AD} \cong \overline{BC}$



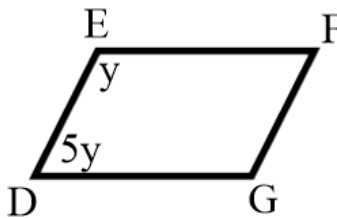
Statement	Reason
1. $\overline{FD} \cong \overline{BE}$, $AECF$ is a parallelogram	1.
2. $\angle F \cong \angle E$	2.
3. $\overline{AF} \cong \overline{EC}$	3.
4. $\triangle AFD \cong \triangle BEC$	4.
5. $\overline{AD} \cong \overline{BC}$	5.

4. Given: $ABCD$ is a parallelogram
 Prove: $x = 6$



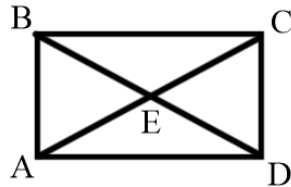
Statement	Reason
1. $ABCD$ is a parallelogram	1.
2. $\overline{AB} \cong \overline{DC}$	2.
3. $AB = DC$	3.
4. $x + 3 = 2x - 3$	4.
5. $3 = x - 3$	5.
6. $6 = x$	6.
7. $x = 6$	7.

5. Given: $DEFG$ is a parallelogram
 Prove: $m\angle D = 150^\circ$



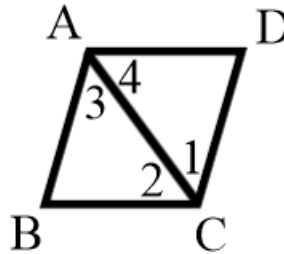
Statement	Reason
1. $DEFG$ is a parallelogram	1.
2. $\angle D$ and $\angle E$ are supplementary	2.
3. $m\angle D + m\angle E = 180^\circ$	3.
4. $5y + y = 180^\circ$	4.
5. $6y = 180^\circ$	5.
6. $y = 30^\circ$	6.
7. $m\angle D = 150^\circ$	7.

6. Given: $ABCD$ is a rectangle
 $AC = 7y - 19$
 $BD = 5y + 1$
 Prove: $y = 10$



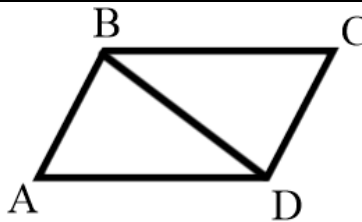
Statement	Reason
1. $ABCD$ is a rectangle	1.
2. $\overline{AC} \cong \overline{BD}$	2.
3. $AC = BD$	3.
4. $AC = 7y - 19, BD = 5y + 1$	4.
5. $7y - 19 = 5y + 1$	5.
6. $2y - 19 = 1$	6.
7. $2y = 20$	7.
8. $y = 10$	8.

7. Given: $ABCD$ is a rhombus
 Prove: \overline{AC} bisects $\angle BAD$ and $\angle BCD$



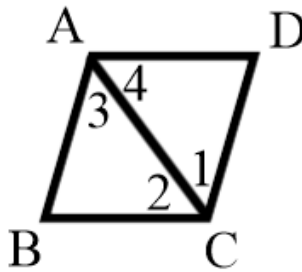
Statement	Reason
1. $ABCD$ is a rhombus	1.
2. $\overline{AB} \cong \overline{AD} \cong \overline{CB} \cong \overline{CD}$	2.
3. $\overline{AC} \cong \overline{AC}$	3.
4. $\triangle ABC \cong \triangle ADC$	4.
5. $\angle 3 \cong \angle 4$ and $\angle 2 \cong \angle 1$	5.
6. \overline{AC} bisects $\angle BAD$ and $\angle BCD$	6.

8. Given: $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{DA}$
 Prove: $ABCD$ is a parallelogram



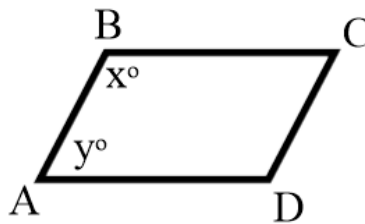
Statement	Reason
1. $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{DA}$	1.
2. $\overline{BD} \cong \overline{BD}$	2.
3. $\triangle ABD \cong \triangle CDB$	3.
4. $\angle ADB \cong \angle CBD$ and $\angle CDB \cong \angle ABD$	4.
5. $\overline{AB} \parallel \overline{DC}$ and $\overline{BC} \parallel \overline{AD}$	5.
6. $ABCD$ is a parallelogram	6.

9. Given: $ABCD$ is a parallelogram
 \overline{AC} bisects $\angle BAD$ and $\angle BCD$
 Prove: $ABCD$ is a rhombus



Statement	Reason
1. \overline{AC} bisects $\angle BAD$ and $\angle BCD$	1.
2. $\angle 1 \cong \angle 2$ and $\angle 3 \cong \angle 4$	2.
3. $\overline{AC} \cong \overline{AC}$	3.
4. $\triangle ABC \cong \triangle ADC$	4.
5. $\overline{AB} \cong \overline{AD}$ and $\overline{BC} \cong \overline{CD}$	5.
6. $ABCD$ is a parallelogram	6.
7. $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{AD}$	7.
8. $\overline{AB} \cong \overline{AD} \cong \overline{BC} \cong \overline{CD}$	8.
9. $ABCD$ is a rhombus	9.

10. Given: $\angle A \cong \angle C$ and $\angle B \cong \angle D$
 Prove: $ABCD$ is a parallelogram



Statement	Reason
1. $\angle A \cong \angle C$ and $\angle B \cong \angle D$	1.
2. $m\angle A + m\angle B + m\angle C + m\angle D = 360^\circ$	2.
3. $x + y + x + y = 360^\circ$	3.
4. $2x + 2y = 360^\circ$	4.
5. $x + y = 180^\circ$	5.
6. $\angle A$ and $\angle B$ are supplementary $\angle A$ and $\angle D$ are supplementary	6.
7. $\overline{AD} \parallel \overline{BC}$ and $\overline{AB} \parallel \overline{DC}$	7.
8. $ABCD$ is a parallelogram	8.