

Complete the below proofs.

Proof #1 (This proof is from Section 2-2)

Given: $GO = EM$ Prove: $GE = OM$

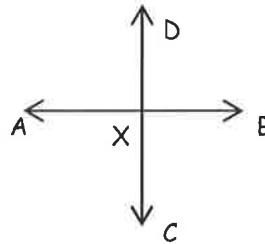


Statements	Reasons
1. $GO = EM$	1. Given
2. $GE + EO = GO$ $EO + OM = EM$	2. Segment Addition Postulate
3. $GE + EO = EO + OM$	3. Substitution
4. $GE = OM$	4. Subtraction

Proof #2 (This proof is from Section 2-5)

Given: $\angle AXD \cong \angle DXB$

Prove: $AB \perp DC$

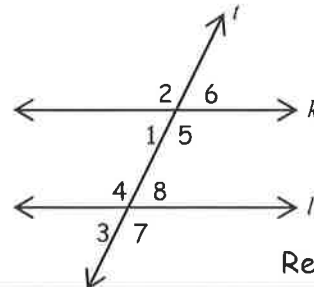


Statements	Reasons
1. $\angle AXD \cong \angle DXB$	1. Given
2. $m\angle AXD + m\angle DXB = 180^\circ$	2. Angle Addition Postulate (Def. linear pair)
3. $m\angle AXD + m\angle AXD = 180^\circ$ $2 \cdot m\angle AXD = 180$	3. Substitution
4. $m\angle AXD = 90$	4. Division Property
5. $\angle AXD$ is a right angle	5. Definition of Right Angle
6. $AB \perp DC$	6. Definition of Perpendicular lines

Proof #3 (This proof is from Section 3-2)

Given: $k \parallel l$

Prove: $\angle 2$ is supplementary to $\angle 8$

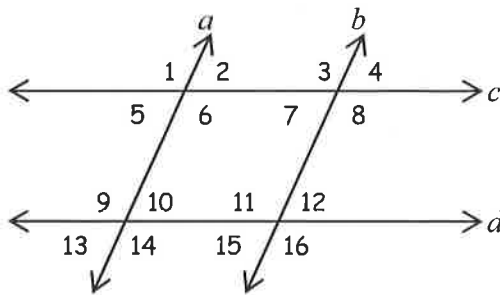


Statements	Reasons
1. $k \parallel l$	1. Given
2. $m\angle 1 + m\angle 2 = 180$	2. Angle Addition Postulate/Def. of Linear Pair
3. $\angle 1 \cong \angle 8$; $m\angle 1 = m\angle 8$	3. If lines are parallel, then Alternate Interior Angles are Congruent
4. $m\angle 8 + m\angle 2 = 180$	4. Substitution
5. $\angle 2$ is supplementary to $\angle 8$	5. Definition of supplementary Angles

Proof #4 (This proof is from Section 3-3)

Given: $a \parallel b$; $\angle 7 \cong \angle 10$

Prove: $c \parallel d$

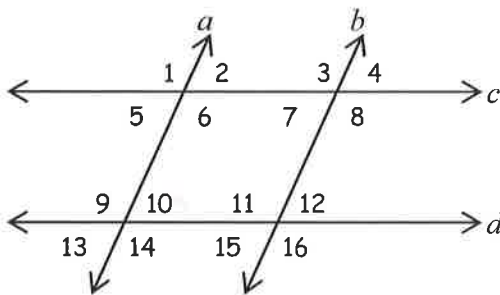


Statements	Reasons
1. $a \parallel b$	1. <u>Given</u>
2. $\angle 2 \cong \angle 7$	2. <u>IF two lines are parallel, then alternate interior angles are congruent</u>
3. $\angle 7 \cong \angle 10$	3. <u>Given</u>
4. $\angle 2 \cong \angle 10$	4. <u>Substitution</u>
5. $c \parallel d$	5. <u>IF corresponding angles are congruent, then the lines are parallel</u>

Proof #5 (This proof is from Section 3-2)

Given: $a \parallel b$; $c \parallel d$

Prove: $\angle 1$ is supplementary to $\angle 12$



Statements	Reasons
1. $a \parallel b$	1. <u>Given</u>
2. $\angle 1 \cong \angle 6$	2. <u>Vertical Angle Theorem</u>
3. $\angle 6 \cong \angle 8$	3. <u>IF two lines are parallel, then corresponding angles are congruent</u>
4. $\angle 1 \cong \angle 8$; $m\angle 1 = m\angle 8$	4. <u>Substitution</u>
5. $c \parallel d$	5. <u>Given</u>
6. $\angle 8$ and $\angle 12$ are supplementary	6. <u>If lines are parallel, then same side interior angles are supplementary</u>
7. $m\angle 8 + m\angle 12 = 180^\circ$	7. <u>Definition of supplementary angles</u>
8. $m\angle 1 + m\angle 12 = 180$	8. <u>Substitution</u>
9. $\angle 1$ is supplementary to $\angle 12$	9. <u>Definition of Supplementary Angles</u>