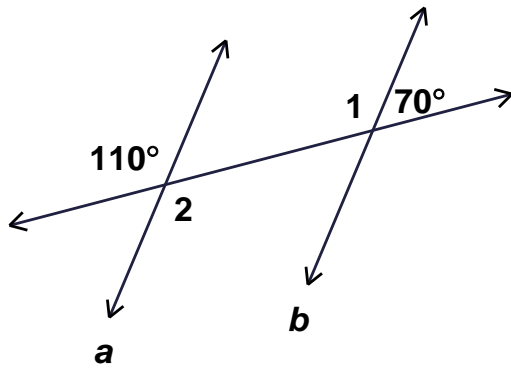


## REASON BANK

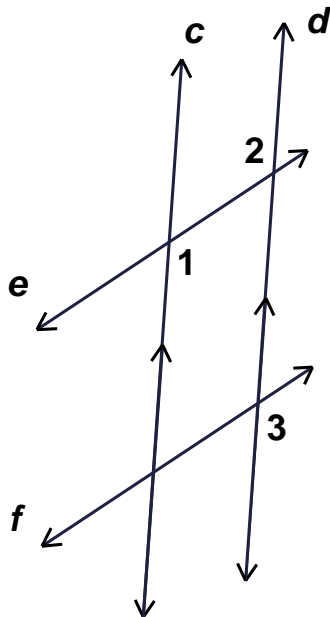
Addition Property Alternate Interior Angles Theorem Alternate Interior Angles Converse Theorem Alternate Exterior Angles Theorem Alternate Exterior Angles Converse Theorem Combine Like Terms Consecutive Interior Angles Theorem Consecutive Interior Angles Converse Theorem Corresponding Angles Postulate Corresponding Angles Converse Postulate	Division Property Distributive Property Given Linear Pair Postulate Multiplication Property Simplification Substitution Property Subtraction Property Transitive Property Vertical Angles Theorem
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1) Given the measures in the diagram, please prove  $a \parallel b$ .



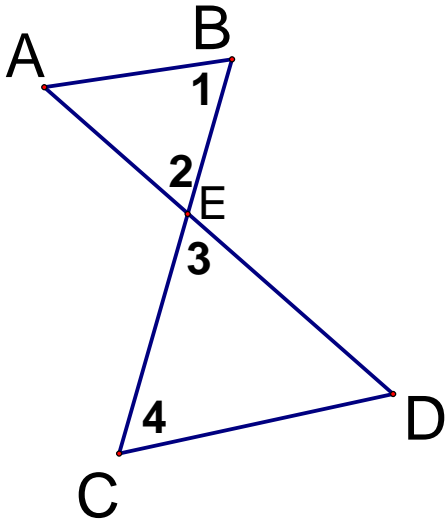
Statements	Reasons
1. Diagram w/values	1. Given
2. $m\angle 1 + 70^\circ = 180^\circ$	2. Linear Pair Post.
3. $m\angle 1 = 110^\circ$	3. Subtraction Property
4. $m\angle 2 = 110^\circ$	4. Vertical Angles Thm.
5. $a \parallel b$	5. Alt. Int. Angles Converse

2) Given  $\angle 1 \cong \angle 3$  and  $c \parallel d$ , please prove  $e \parallel f$ .



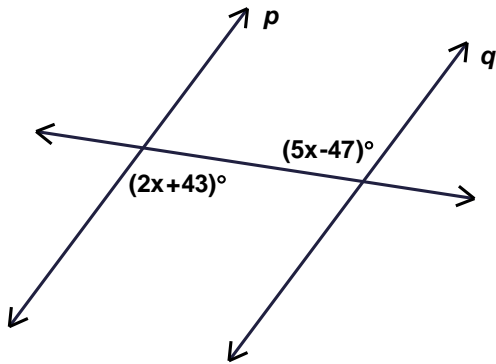
Statements	Reasons
1. $c \parallel d$	1. Given
2. $\angle 1 \cong \angle 2$	2. Alt. Int. Angles Thm
3. $\angle 1 \cong \angle 3$	3. Given
4. $\angle 2 \cong \angle 3$	4. Transitive Prop.
5. $e \parallel f$	5. Alt. Ext. Angles Converse

3) Given  $\overline{AB} \parallel \overline{CD}$  and  $\angle 2 \cong \angle 4$ , please prove  $\angle 1 \cong \angle 3$



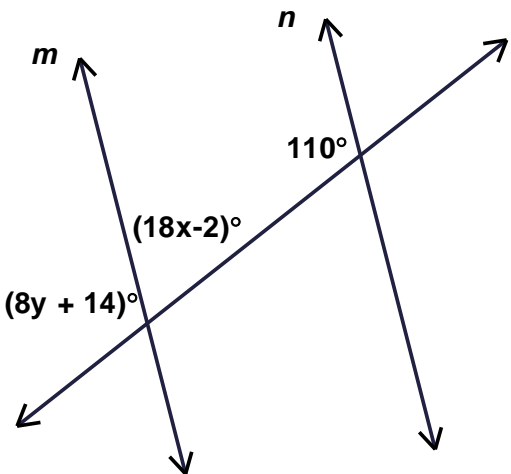
Statements	Reasons
1. $\overline{AB} \parallel \overline{CD}$	1. Given
2. $\angle 1 \cong \angle 4$	2. Alt. Int. Angles Thm
3. $\angle 2 \cong \angle 4$	3. Given
4. $\angle 2 \cong \angle 3$	4. Vertical Angles Thm
5. $\angle 1 \cong \angle 3$	5. Transitive Prop

4) Given that  $p \parallel q$ , please solve for x. Justify every step using the same “proof” strategy.



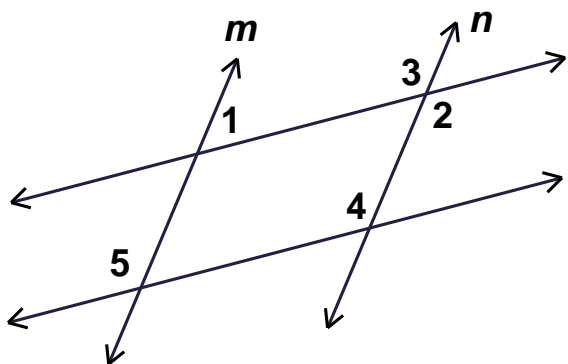
Statements	Reasons
1. $p \parallel q$	1. Given
2. $2x + 43 = 5x - 47$	2. Alt. Int. Angles Thm
3. $43 = 3x - 47$	3. Subtraction Prop.
4. $90 = 3x$	4. Addition Prop.
5. $x = 30$	5. Division Prop.

5) Given that  $m \parallel n$ , please solve for  $x$  and  $y$ . Justify every step using the “proof” strategy.



Statements	Reasons
1. $m \parallel n$	1. Given
2. $8y + 14 = 110$	2. Corresponding Angles Postulate
3. $8y = 96$	3. Subtraction Prop.
4. $y = 12$	4. Division Prop.
5. $18x - 2 + 110 = 180$	5. Consec. Int. Angles Thm.
6. $18x + 108 = 180$	6. Combine Like Terms
7. $18x = 72$	7. Subtraction Prop.
8. $x = 4$	8. Division Prop.

6) Given  $\angle 1$  and  $\angle 2$  are supplementary, please prove  $\angle 4 \cong \angle 5$ .



Statements	Reasons
1. $\angle 1$ and $\angle 2$ are supplementary	1. Given
2. $\angle 2 \cong \angle 3$	2. Vertical Angles Thm.
3. $\angle 1$ and $\angle 3$ are supplementary	3. Substitution Property
4. $m \parallel n$	4. Consec. Int. Angles Converse
5. $\angle 4 \cong \angle 5$	5. Corresponding Angles Postulate