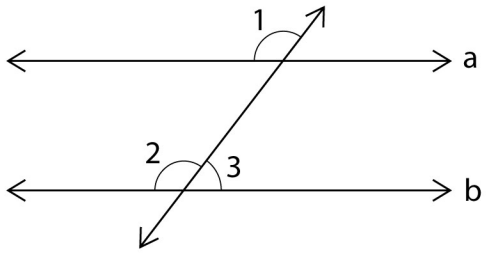
Parallel Lines and Transversals Proofs

MATH MONKS

Fill in the blanks.

A) Given: a || b

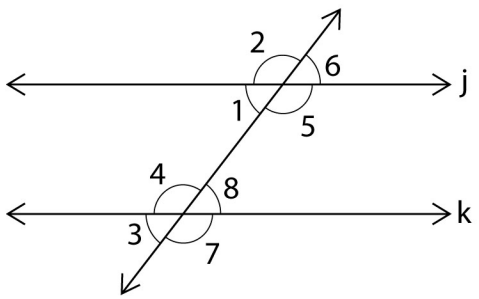
Prove: $m\angle 1 + m\angle 3 = 180°$



Statement	Reason
1. a || b	1. Given.
2. _____	2. Corresponding angle theorem.
3. $m\angle 1 = m\angle 2$	3. _____
4. _____	4. Definition of a linear pair.
5. _____	5. Linear pair theorem.
6. $m\angle 1 + m\angle 3 = 180°$	6. _____

B) Given: j || k

Prove: ∠1 and ∠7 are supplementary.



Statement	Reason
1. j || k	1. Given.
2. ∠1 and ∠4 are supplementary ∠s.	2. _____
3. $m\angle 1 + m\angle 4 = 180°$	3. _____
4. _____	4. Vertically opposite ∠s.
5. _____	5. Substitution property of equality.
6. ∠1 and ∠7 are supplementary ∠s.	6. _____

Parallel Lines and Transversals Proofs

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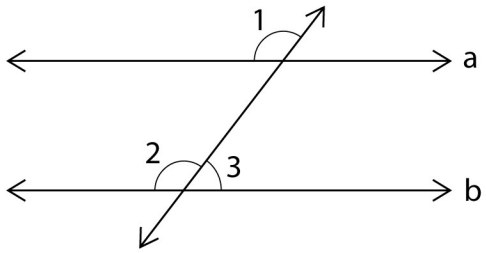
Answers

A) Given: a || b

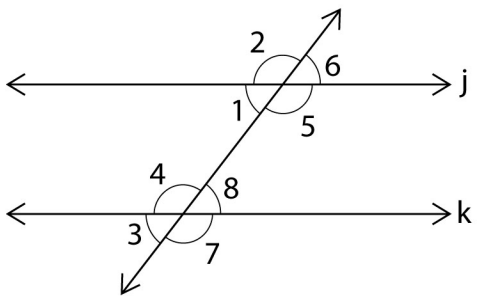
Prove: m∠1 + m∠3 = 180°



Statement	Reason
1. a || b	1. Given.
2. ∠1 ≅ ∠2	2. Corresponding angle theorem.
3. m∠1 = m∠2	3. Definition of ≅ ∠s.
4. ∠2 and ∠3 are a linear pair.	4. Definition of a linear pair.
5. m∠2 + m∠3 = 180°	5. Linear pair theorem.
6. m∠1 + m∠3 = 180°	6. Substitution property of equality.

B) Given: j || k

Prove: ∠1 and ∠7 are supplementary.



Statement	Reason
1. j || k	1. Given.
2. ∠1 and ∠4 are supplementary ∠s.	2. Consecutive interior ∠s are supplementary.
3. m∠1 + m∠4 = 180°	3. Definition of supplementary ∠s.
4. m∠4 = m∠7	4. Vertically opposite ∠s.
5. m∠1 + m∠7 = 180°	5. Substitution property of equality.
6. ∠1 and ∠7 are supplementary ∠s.	6. Definition of supplementary ∠s.