2-Column Deductive Proofs
Fill in the missing statements and reasons

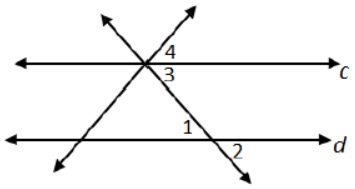
(Use appropriate symbols and abbreviations)

#1:

Given: Line c is parallel to Line d

$\angle 4 = \angle 3$

Prove: $\angle 4 = \angle 1$

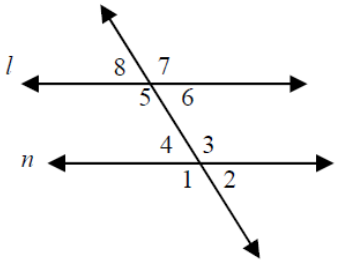


Statement	Reason
1. $c \parallel d$	1. Given
2. $\angle 4 = \angle 3$	2. Given
3. $\angle 3 = \angle 2$	3. corresp. $\angle$s
4. $\angle 4 = \angle 2$	4. By the transitive property
5. $\angle 2 = \angle 1$	5. VOA
6. $\angle 4 = \angle 1$	6. By the transitive property

#2:

Given: Line l is parallel to Line n

Prove: $\angle 2 + \angle 7 = 180°$



Statement	Reason
1. $l \parallel n$	1. Given
2. $\angle 6 + \angle 7 = 180°$	2. Linear pair
3. $\angle 6 = \angle 2$	3. corresp. $\angle$s
4. $\angle 2 + \angle 7 = 180°$	4. By substitution

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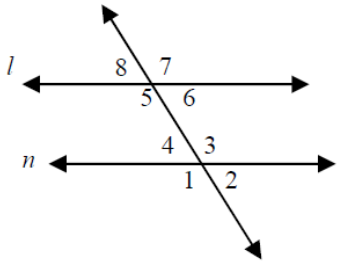
#3:

Given: Line l is parallel to Line n

Prove: $\angle 1 + \angle 6 = 180°$

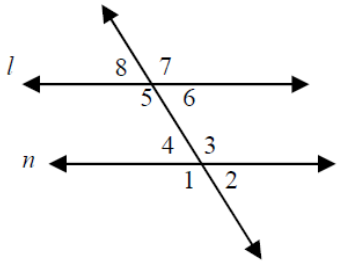


Statement	**Reason**
1. $l \parallel n$	1. Given
2. $\angle 1 + \angle 4 = 180°$	2. linear pair
3. $\angle 4 = \angle 6$	3. Alt int $\angle s$
4. $\angle 1 + \angle 6 = 180°$	4. by substitution

#4:

Given: $\angle 5 + \angle 2 = 180°$

Prove: Line l is parallel to Line n



Statement	**Reason**
1. $\angle 5 + \angle 2 = 180°$	1. Given
2. $\angle 2 + \angle 3 = 180°$	2. linear pair
3. $\angle 5 + \angle 2 = \angle 2 + \angle 3$	3. By substitution
4. $\angle 5 = \angle 3$	4. By subtraction
5. $l \parallel n$	5. when alt int $\angle s$ are equal the lines are parallel

2-Column Deductive Proofs
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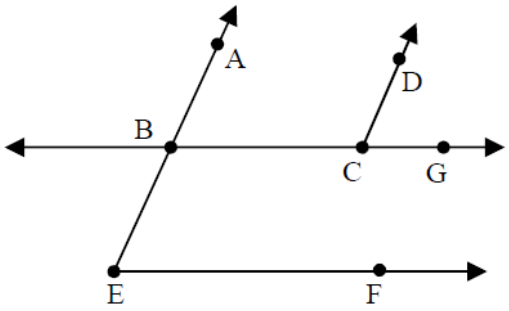
#5:

Given: $\angle BCD + \angle BEF = 180°$

Line ***AB*** is parallel to Line ***CD***

Prove: Line ***BC*** is parallel to Line ***EF***



Statement	**Reason**
1. $\angle BCD + \angle BEF = 180°$	1. Given
2. $AB \parallel CD$	2. Given
3. $\angle BCD + \angle ABC = 180°$	3. same side int $\angle$s
4. $\angle BCD + \angle BEF = \angle BCD + \angle ABC$	4. by substitution
5. $\angle BEF = \angle ABC$	5. By subtraction
6. $BC \parallel EF$	6. when corresp $\angle$s are equal the lines are parallel