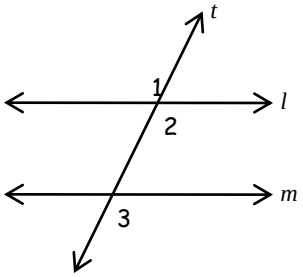
Geometry / Trig 2 Name _____

3.2 Parallel Lines & Proofs Practice Date _____

Proof #1

Proof of Alternate Exterior Angles congruent:

Given: $l \parallel m$ Prove: $\angle 1 \cong \angle 3$



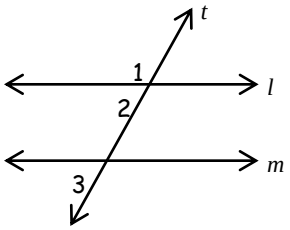
Statements	Reasons
1. _____	1. _____
2. $\angle 1 \cong \angle 2$	2. _____
3. _____	3. If lines are parallel, then corresponding angles are congruent.
4. _____	4. _____

Proof #2

Proof of Same-Side Exterior Angles supplementary:

Given: $l \parallel m$

Prove: $\angle 1$ is supplementary to $\angle 3$

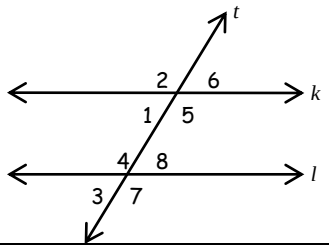


Statements	Reasons
1. _____	1. _____
2. _____ + _____ = 180	2. Angle Addition Postulate
3. $m\angle 2 = m\angle 3$; $\angle 2 \cong \angle 3$	3. _____
	_____
	_____
4. _____ + _____ = 180	4. _____
5. _____	5. Definition of _____

Proof #3

Given: $k \parallel l$

Prove: $\angle 1$ is supplementary to $\angle 7$

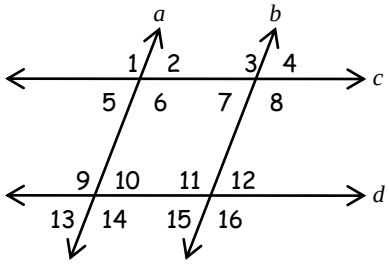


Statements	Reasons
1. _____	1. _____
2. $\angle 1 \cong \angle$_____ ; _____ = _____	2. If lines are parallel, then alternate interior angles are congruent.
3. _____	3. Angle Addition Postulate
4. _____	4. Substitution
5. _____	5. _____

Proof #4

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

Prove: $\angle 6 \cong \angle 11$

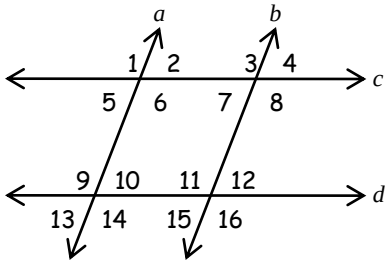


Statements	Reasons
1. $a \parallel b$	1. _____
2. $\angle 6 \cong \angle 8$	2. _____
	_____
3. _____	3. Given
4. _____	4. If lines are parallel, then alternate interior angles are congruent.
5. _____	5. _____

Proof #5

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

Prove: $\angle 4$ is supplementary to $\angle 9$



Statements	Reasons
1. _____	1. Given
2. $\angle 4 \cong \angle$____	2. Vertical Angles Theorem
3. $\angle$____ $\cong \angle$____	3. _____
	_____
	_____
4. $\angle 4 \cong \angle 5$; $m\angle 4 = m\angle 5$	4. _____
5. _____	5. Given
6. $\angle 5$ and $\angle 9$ are supplementary	6. If lines are parallel, then _____
	_____
7. _____	7. Definition of supplementary angles
8. _____	8. _____
9. _____	9. Definition of _____