Review:

Whenever we have two lines cut by a transversal, what types of angles are formed?

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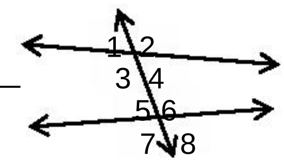
Use the diagram to the right, and name the pairs of angles listed:



1) ∠1 and ∠4; ∠2 and ∠3; ∠6 and ∠7; ∠5 and ∠8: ___________________________

2) ∠4 and ∠5; ∠3 and ∠6: _________________________

3) ∠1 and ∠5; ∠2 and ∠6; ∠3 and ∠7; ∠4 and ∠8: ______________________________

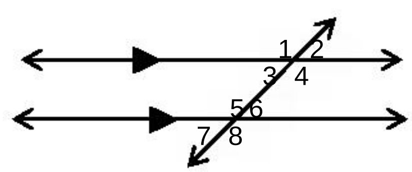
4) ∠1 and ∠8; ∠2 and ∠7: ___________________________________

5) ∠3 and ∠5; ∠4 and ∠6: _______________________________

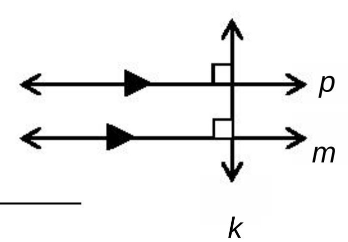
When the two lines are parallel, you get some special angle relationships:

Corresponding Angles Postulate	If 2 parallel lines are cut by a transversal, then the pairs of *corresponding angles* are __________________
Alternate Interior Angles Theorem	If 2 parallel lines are cut by a transversal, then the pairs of *alternate interior angles* are __________________
Alternate Exterior Angles Theorem	If 2 parallel lines are cut by a transversal, then the pairs of *alternate exterior angles* are __________________
Consecutive Interior Angles Theorem	If 2 parallel lines are cut by a transversal, then the pairs of *same side interior* angles are __________________
Perpendicular Transversal Theorem	If a line is ⊥ to one of the 2 parallel lines, then it is also ⊥ to the other line.

Examples and practice 1: Identify the postulate or theorem that makes each statement true.



1. ∠2 ≅ ∠7 _________________________________
2. ∠4 & ∠6 are supplementary __________________________________
3. ∠1 ≅ ∠5 _________________________________
4. ∠3 ≅ ∠6 _________________________________
5. ∠5 ≅ ∠8 _________________________________



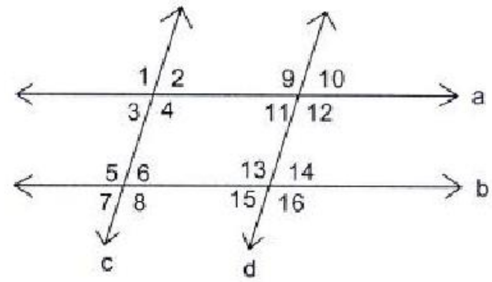
6. ∠7 & ∠8 are supplementary __________________________________

7. If line p and m are || and k ⊥ m, then k ⊥ p ________________________________

Example 2: Complete the proof below

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

   Prove: $\angle 1 \cong \angle 13$

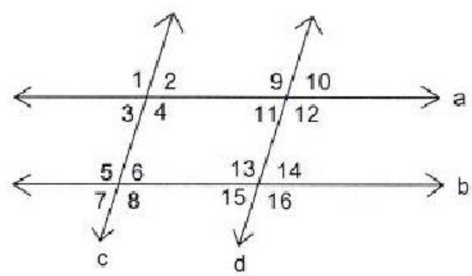


Statements	Reasons
1. $a \parallel b$; $c \parallel d$	1.
2. $\angle 1 \cong \angle 12$	2.
3. $\angle 12 \cong \angle 13$	3.
4. $\angle 1 \cong \angle 13$	4.

Practice 2: Complete the proof below:

2. Given: $a \parallel b$

   Prove: $m\angle 9 + m\angle 14 = 180°$

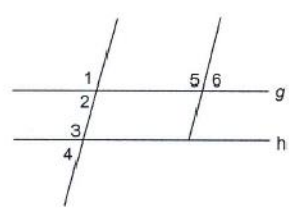


Statements	Reasons
1. $a \parallel b$	1.
2. $m\angle 9 + m\angle 11 = 180°$	2.
3. $m\angle 11 = m\angle 14$	3.
4. $m\angle 9 + m\angle 14 = 180°$	4.

Example 3: Complete the proof below:

4. Given: $g \parallel h$; $\angle 1 \cong \angle 5$

   Prove: $\angle 5 \cong \angle 3$

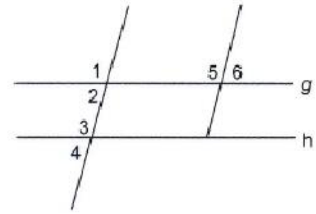


Statements	Reasons

Practice 3: Complete the proofs below:

5. Given: $g \parallel h$; $\angle 6$ & $\angle 3$ are supplementary

Prove: $\angle 6 \cong \angle 2$

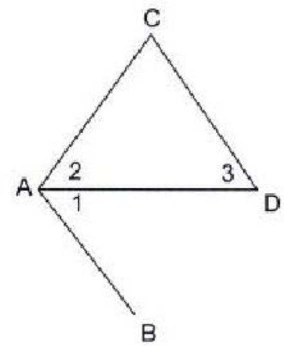


Statements Reasons

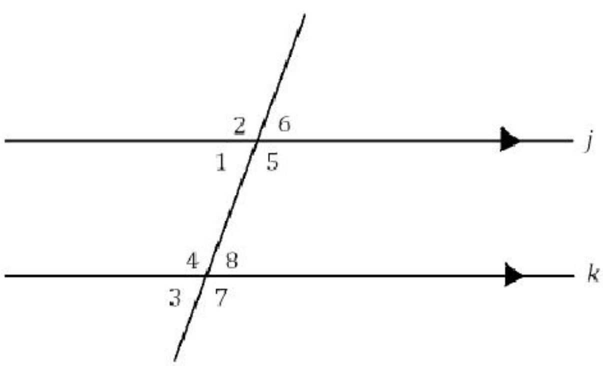
6. Given: $\overline{CD} \parallel \overline{AB}$; $\angle 2 \cong \angle 1$

Prove: $\angle 2 \cong \angle 3$

Statements Reasons



Practice 4: Complete the proofs below:

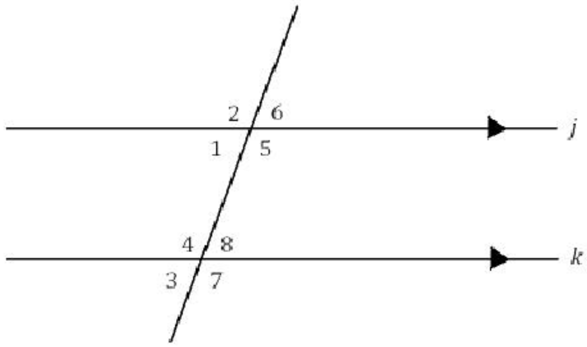


Given: $j \parallel k$

Prove: $\measuredangle 2 \cong \measuredangle 7$

1. $j \parallel k$	**1.** ______________________________
2. $\measuredangle 2 \cong \measuredangle 4$	**2.** ______________________________
3. $\measuredangle 4 \cong \measuredangle 7$	**3.** ______________________________
4. $\measuredangle 2 \cong \measuredangle 7$	**4.** ______________________________

Practice 5: Complete the proof below:

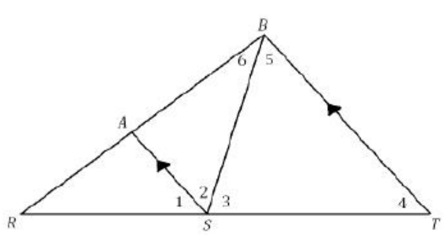


Given: $j \parallel k$

Prove: $\measuredangle 1$ and $\measuredangle 7$ are supp $\measuredangle$s

1. $j \parallel k$	**1.** ________________
2. $\measuredangle 1$ and $\measuredangle 4$ are supp $\measuredangle$s	**2.** ________________
3. $m\measuredangle 1 + m\measuredangle 4 = 180$	**3.** ________________
4. $m\measuredangle 4 = m\measuredangle 7$	**4.** ________________
5. $m\measuredangle 1 + m\measuredangle 7 = 180$	**5.** ________________
6. $\measuredangle 1$ and $\measuredangle 7$ are supp $\measuredangle$s	**6.** ________________

Practice 6: Complete the proof below:



Given: $\overline{AS} \parallel \overline{BT}$;
$m\measuredangle 4 = m\measuredangle 5$

Prove: $m\measuredangle 1 = m\measuredangle 2$

1. $\overline{AS} \parallel \overline{BT}$	**1.** ________________
2. $m\measuredangle 2 = m\measuredangle 5$	**2.** ________________
3. $m\measuredangle 4 = m\measuredangle 5$	**3.** ________________
4. $m\measuredangle 2 = m\measuredangle 4$	**4.** ________________
5. $m\measuredangle 1 = m\measuredangle 4$	**5.** ________________
6. $m\measuredangle 1 = m\measuredangle 2$	**6.** ________________