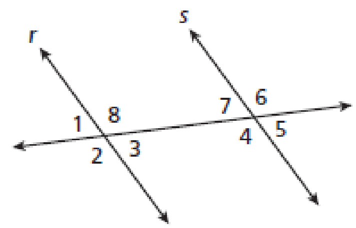
Geometry **Name:** ______________________

Unit 3—parallel line vocabulary **Period:** ______________________

Day 7—parallel lines & vocabulary practice answers

SEE EXAMPLE 2
p. 164

Use the theorems and given information to show that $r \parallel s$.



4. $\angle 1 \cong \angle 5$

5. $m\angle 3 + m\angle 4 = 180°$

6. $\angle 3 \cong \angle 7$

7. $m\angle 4 = (13x - 4)°$, $m\angle 8 = (9x + 16)°$, $x = 5$

8. $m\angle 8 = (17x + 37)°$, $m\angle 7 = (9x - 13)°$, $x = 6$

9. $m\angle 2 = (25x + 7)°$, $m\angle 6 = (24x + 12)°$, $x = 5$

4. $\angle 1 \cong \angle 5$, so $r \parallel s$ by the Conv. of the Alt. Ext. ∡ Thm.

5. $\angle 3$ and $\angle 4$ are supp., so $r \parallel s$ by the Conv. of the Same-Side Int. ∡ Thm.

6. $\angle 3 \cong \angle 7$, so $r \parallel s$ by the Conv. of the Alt. Int. ∡ Thm.

7. $m\angle 4 = 61°$, and $m\angle 8 = 61°$, so $\angle 4 \cong \angle 8$. $r \parallel s$ by the Conv. of the Alt. Int. ∡ Thm.

9. $m\angle 2 = 132°$, and $m\angle 6 = 132°$, so $\angle 2 \cong \angle 6$. $r \parallel s$ by the Conv. of the Alt. Ext. ∡ Thm.

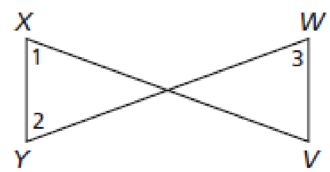
SEE EXAMPLE 3
p. 164

10. Complete the following two-column proof.

Given: $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 1$

Prove: $XY \parallel WV$

Proof:



Statements	Reasons
1. $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 1$	**1.** Given
2. $\angle 2 \cong \angle 3$	**2.** a. ___?___
3. b. ___?___ $\overline{XY} \parallel \overline{WV}$	**3.** c. ___?___

Trans. Prop. of ≅

Conv. of the Alt. Int. ∡ Thm.