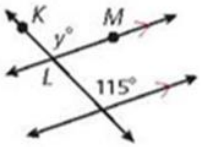
3.2 Day 2 Homework

Page 158-160 #5 -19, 24-25, 27-28, 30-31, 34, 36

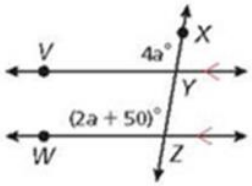
5. **Safety** The railing of a wheelchair ramp is parallel to the ramp. Find x and y in the diagram.

Find each angle measure.

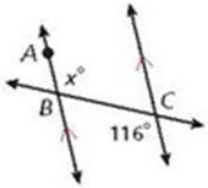
6. m∠*KLM*



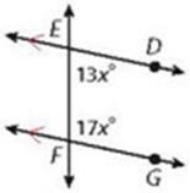
7. m∠*VYX*



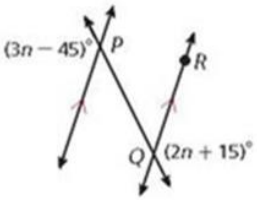
8. m∠*ABC*



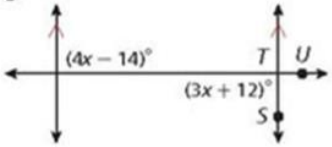
9. m∠*EFG*



10. m∠*PQR*



11. m∠*STU*

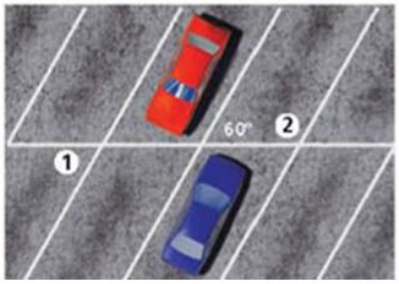


12. **Parking** In the parking lot shown, the lines that mark the width of each space are parallel.

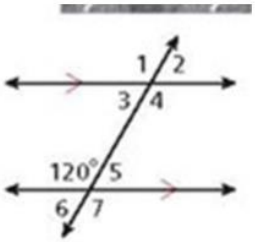
$m\angle 1 = (2x - 3y)^\circ$

$m\angle 2 = (x + 3y)^\circ$

Find x and y.



Find each angle measure. Justify each answer with a postulate or theorem.



13. $m\angle 1$ 14. $m\angle 2$ 15. $m\angle 3$

16. $m\angle 4$ 17. $m\angle 5$ 18. $m\angle 6$

19. $m\angle 7$

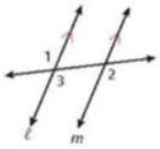
24. **Architecture** The Luxor Hotel in Las Vegas, Nevada, is a 30-story pyramid. The hotel uses an elevator called an inclinator to take people up the side of the pyramid. The inclinator travels at a 39° angle. Which theorem or postulate best illustrates the angles formed by the path of the inclinator and each parallel floor? (*Hint:* Draw a picture.)

25. **Complete the two-column proof of the Alternate Exterior Angles Theorem.**

Given: $\ell \parallel m$

Prove: $\angle 1 \cong \angle 2$

Proof:



Statements	Reasons
1. $\ell \parallel m$	1. Given
2. a. ?	2. Vert. ∠ Thm.
3. $\angle 3 \cong \angle 2$	3. b. ?
4. c. ?	4. d. ?

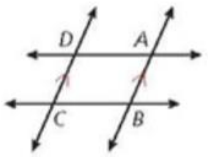
Draw the given situation or tell why it is impossible.

27. Two parallel lines are intersected by a transversal so that the corresponding angles are supplementary.

28. Two parallel lines are intersected by a transversal so that the same-side interior angles are complementary.

30. Land Development A piece of property lies between two parallel streets as shown. $m\angle 1 = (2x + 6)^\circ$, and $m\angle 2 = (3x + 9)^\circ$. What is the relationship between the angles? What are their measures?

31. ERROR ANALYSIS In the figure, $m\angle ABC = (15x + 5)^\circ$, and $m\angle BCD = (10x + 25)^\circ$. Which value of $m\angle BCD$ is incorrect? Explain.



A

$15x + 5 = 10x + 25$
$-10x \quad -10x$
$5x + 5 = 25$
$-5 \quad -5$
$5x = 20$
$x = 4$

$m\angle BCD = 10(4) + 25 = 65^\circ$

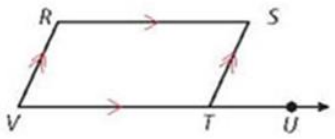
B

$(15x + 5) + (10x + 25) = 180$
$25x + 30 = 180$
$-30 \quad -30$
$25x = 150$
$x = 6$

$m\angle BCD = 10(6) + 25 = 85^\circ$

34. $m\angle RST = (x + 50)^\circ$, and $m\angle STU = (3x + 20)^\circ$. Find $m\angle RVT$.

Ⓐ 15° Ⓒ 65°
Ⓑ 27.5° Ⓓ 77.5°



36. Short Response Given $a \parallel b$ with transversal t, explain why $\angle 1$ and $\angle 3$ are supplementary.