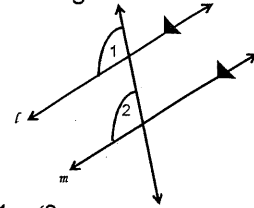


Angles & // Lines

Pages #s 179 – 186
Chapter 3 – 2

Postulate– Corresponding \angle s Postulate

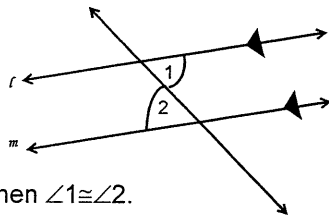
- If 2 // lines are cut by a transversal, then the pairs of corresponding \angle s are \cong .



- i.e. If $l \parallel m$, then $\angle 1 \cong \angle 2$.

Alternate Interior \angle s Theorem

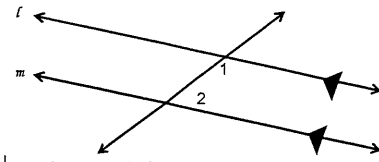
- If 2 // lines are cut by a transversal, then the pairs of alternate interior \angle s are \cong .



- i.e. If $l \parallel m$, then $\angle 1 \cong \angle 2$.

Consecutive Int. \angle s theorem

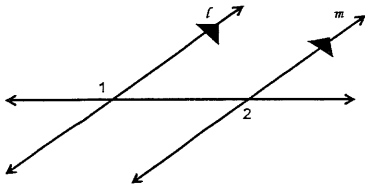
- If 2 // lines are cut by a transversal, then the pairs of consecutive int. \angle s are supplementary.



- i.e. If $l \parallel m$, then $\angle 1$ & $\angle 2$ are supp.

Alternate Exterior. \angle s Theorem

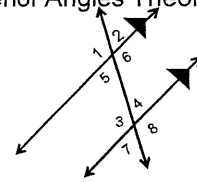
- If 2 \parallel lines are cut by a transversal, then the pairs of alternate exterior \angle s are \cong .



- i.e. If $l \parallel m$, then $\angle 1 \cong \angle 2$.

Proof: Alternate Interior Angles Theorem

- Given: $a \parallel b$
 t is a transversal of a and b .

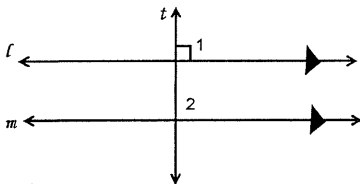


- Prove: $\angle 4 \cong \angle 5$

- Paragraph Proof: We are given that $a \parallel b$ with a transversal t . By the Corresponding Angles Postulate, corresponding angles are congruent. So, $\angle 2 \cong \angle 4$ and $\angle 6 \cong \angle 8$. Also, $\angle 5 \cong \angle 2$ and $\angle 8 \cong \angle 3$ because vertical angles are congruent. Therefore, $\angle 5 \cong \angle 4$ and $\angle 3 \cong \angle 6$ since congruence of angles is transitive.

\perp Transversal Theorem

- If a transversal is \perp to one of 2 \parallel lines, then it is \perp to the other.



- i.e. If $l \parallel m$, & $t \perp l$, then $t \perp m$.

** $\angle 1$ & $\angle 2$ added for proof purposes.

Ex: Find:

$m\angle 1 =$

$m\angle 2 =$

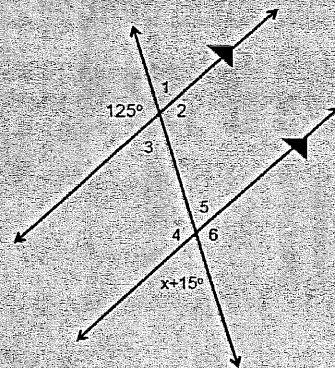
$m\angle 3 =$

$m\angle 4 =$

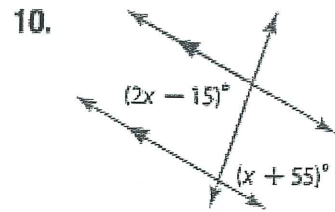
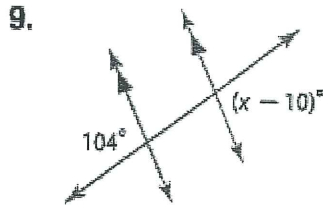
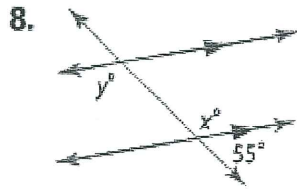
$m\angle 5 =$

$m\angle 6 =$

$x =$

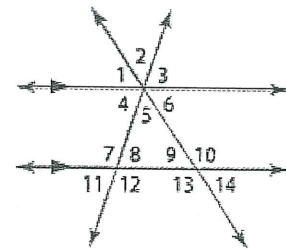


Find the value of the variable(s) in each figure. Explain your reasoning.



In the figure, $m\angle 11 = 62$ and $m\angle 14 = 38$. Find the measure of each angle. Tell which postulate(s) or theorem(s) you used.

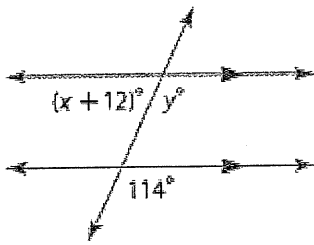
- | | | |
|-----------------|----------------|-----------------|
| 11. $\angle 4$ | 12. $\angle 3$ | 13. $\angle 12$ |
| 14. $\angle 8$ | 15. $\angle 6$ | 16. $\angle 2$ |
| 17. $\angle 10$ | 18. $\angle 5$ | 19. $\angle 1$ |



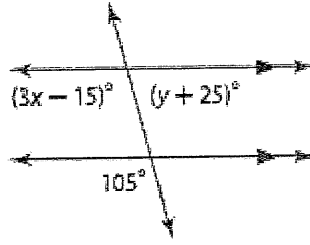
Problems # 25, 27, and 29

Find the value of the variable(s) in each figure. Explain your reasoning.

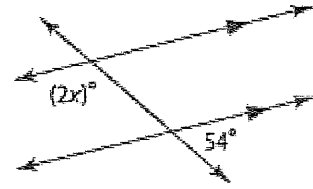
24.



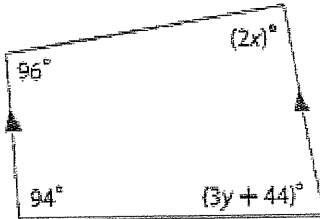
25



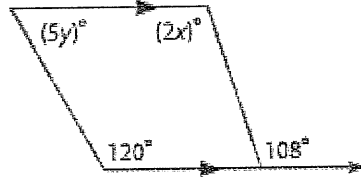
26.



27.



28.



29.

