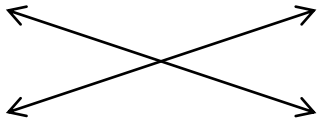
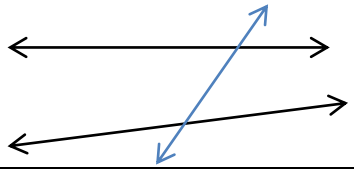
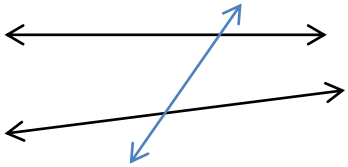
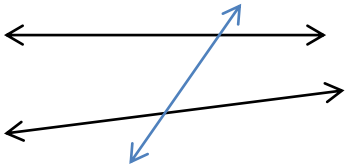
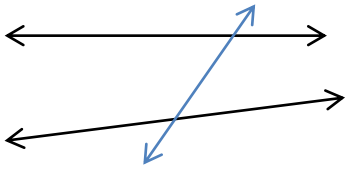
Name: Date:

CCM2 Unit 2 Lesson 4: Parallel Lines

Property	Definition	Picture
Vertical Angles	Two angles such that the sides of one angle are opposite rays to the side of the other angles.	
Transversal	A Line that intersects two or more coplanar lines in different points.	
Corresponding Angles	Two angles in corresponding positions relative to the two lines.	
Alternate Interior Angles	Two non-adjacent interior angles on opposite sides of the transversal.	
Same-Side Interior Angles	Two interior angles on the same side of the transversal.	

Postulates:

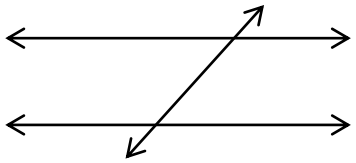
Theorems:

Corresponding Angle Postulate:

Alternate Interior Angles Theorem: If two parallel lines are cut by a transversal, then alternate interior angles are congruent.

Given: $k \parallel l$; $transversal\ t\ cuts\ k\ and\ l$

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

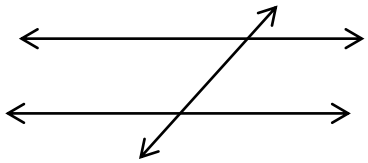


Statements	Reasons

Same-Side Interior Angles Theorem: If two parallel lines are cut by a transversal, then same-side interior angles are supplementary.

Given: $k \parallel l$; $transversal\ t\ cuts\ k\ and\ l$

Prove: $\angle 1\ is\ supplementary\ to\ \angle 4$

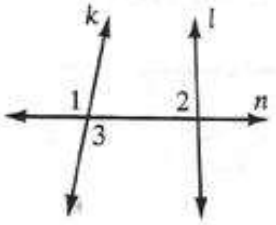


Statements	Reasons

EXAMPLES:

Name the two lines and the transversal that form each pair of angles.

7. a. $\angle 1$ and $\angle 2$
b. $\angle 2$ and $\angle 3$

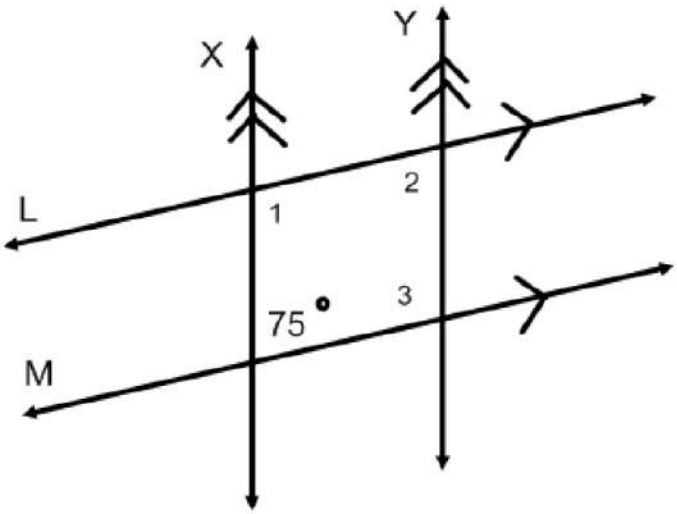


Directions: Use the figure below. Lines X and Y are parallel. Lines L and M are parallel.

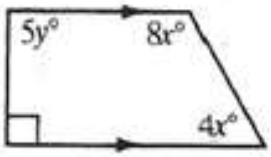
8. $m\angle 1 =$

9. $m\angle 2 =$

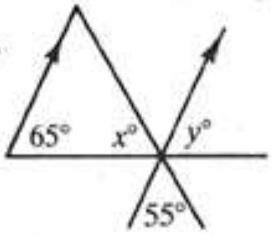
10. $m\angle 3 =$



1.



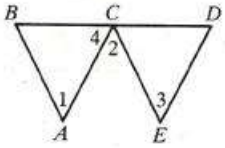
2.



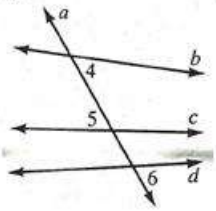
Practice

Name the two lines and the transversal that form each pair of angles.

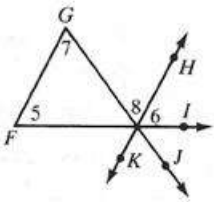
9. a. ∠1 and ∠2
b. ∠2 and ∠3



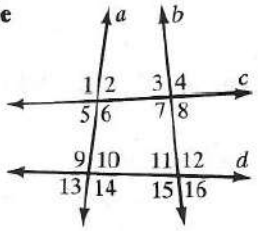
8. a. ∠4 and ∠5
b. ∠4 and ∠6



10. a. ∠5 and ∠6
b. ∠7 and ∠8

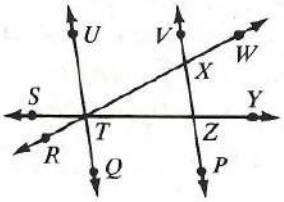


Classify each pair of angles as alternate interior angles, same-side interior angles, or corresponding angles.



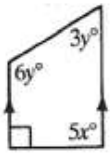
11. ∠2 and ∠4
12. ∠7 and ∠12
13. ∠10 and ∠11
14. ∠5 and ∠10
15. ∠14 and ∠15
16. ∠3 and ∠11

17. ∠*STU* and ∠*SZX*
18. ∠*WXZ* and ∠*YZX*
19. ∠*UTZ* and ∠*VZY*
20. ∠*VXT* and ∠*UTX*
21. ∠*QTZ* and ∠*VZT*
22. ∠*VXT* and ∠*XTQ*
23. ∠*WXZ* and ∠*YZP*
24. ∠*QTZ* and ∠*PZT*

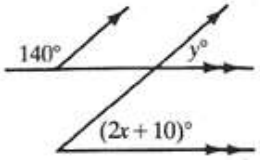


Find the values of *x* and *y*.

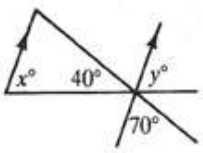
1.



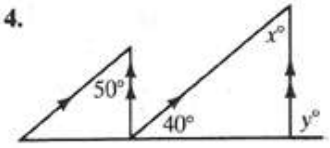
2.



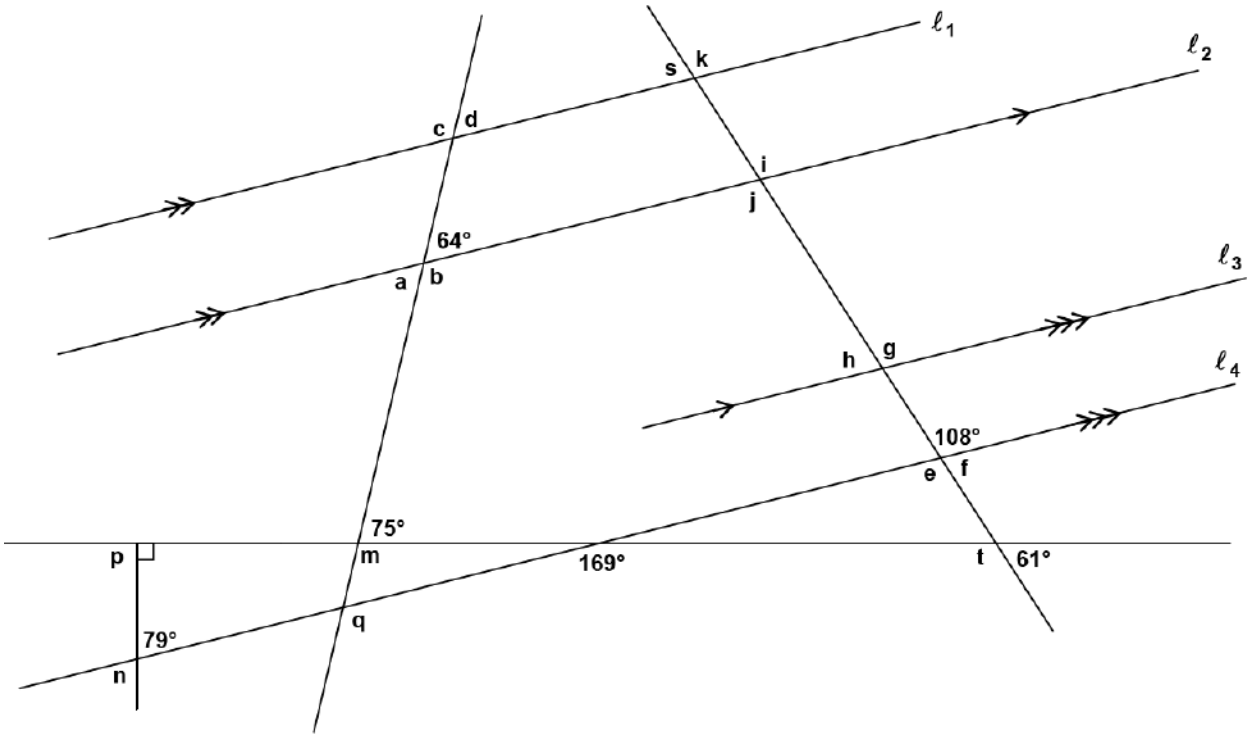
3.



4.



Calculate each lettered angles measurement.



Find the values of x *and* y *if* $k \parallel l \parallel m$