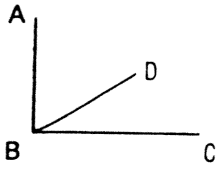
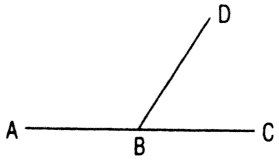
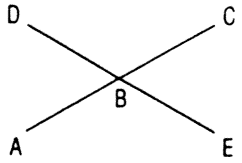
Name _____

3.4 Angle Relationships

MATHPOWER™ *Eight*, pp. 86–87

Complementary angles add to 90°.	**Supplementary angles** add to 180°.	**Opposite angles** are equal.
		
∠ABD + ∠DBC = 90°	∠ABD + ∠DBC = 180°	∠ABD = ∠CBE

State the measure of the angle that is complementary to each of the following.

1. 48° _____ **2.** 19° _____

3. 65° _____ **4.** 13° _____

5. 45° _____ **6.** 52° _____

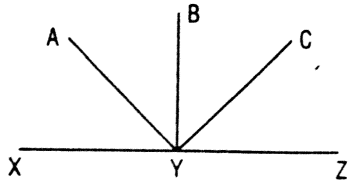
State the measure of the angle that is supplementary to each of the following.

7. 41° _____ **8.** 96° _____

9. 125° _____ **10.** 80° _____

11. 160° _____ **12.** 90° _____

13. Measure each angle and state 3 pairs of complementary angles.

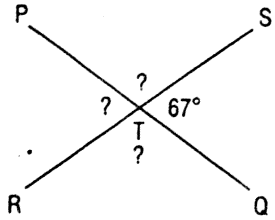


_____

_____

_____

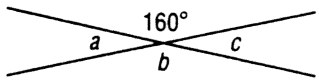
Determine the missing angle measures.

14. 

∠PTS = _____

∠PTR = _____

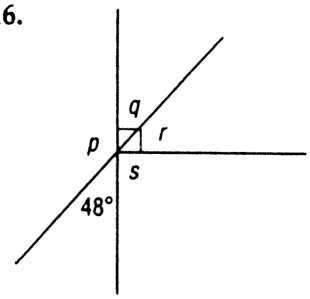
∠RTQ = _____

15. 

∠a = _____

∠b = _____

∠c = _____

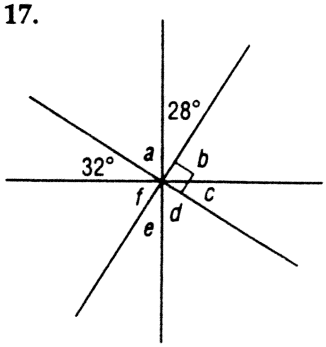
16. 

∠p = _____

∠q = _____

∠r = _____

∠s = _____

17. 

∠a = _____

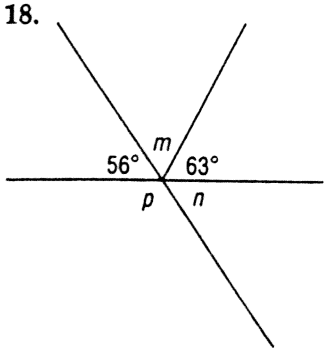
∠b = _____

∠c = _____

∠d = _____

∠e = _____

∠f = _____

18. 

∠m = _____

∠n = _____

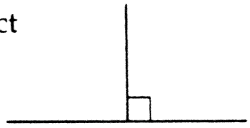
∠p = _____

Name _____

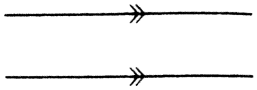
3.5 Parallel and Perpendicular Lines

MATHPOWER™ *Eight*, pp. 88–89

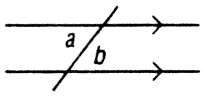
Perpendicular lines intersect to form right angles.



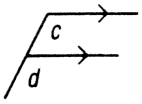
Parallel lines are lines in the same plane that do not intersect.



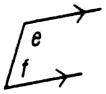
A **transversal** is a line or line segment that crosses 2 or more lines.
When a transversal crosses 2 parallel lines, the alternate angles are equal, the corresponding angles are equal, and the co-interior angles add to 180°.



$\angle a = \angle b$

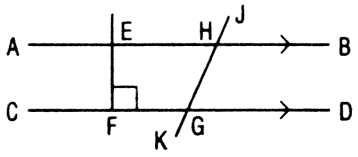


$\angle c = \angle d$



$\angle e + \angle f = 180°$

In the diagram, name the following.



1. 2 pairs of perpendicular lines

_____

2. 1 pair of parallel lines

_____

3. 2 pairs of alternate angles

_____

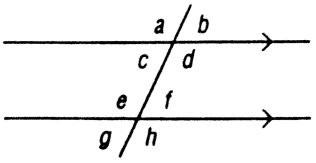
4. 2 pairs of corresponding angles

_____

5. 2 pairs of co-interior angles

_____

Use the diagram to help complete each statement.



6. $\angle a$ and _____ are opposite angles.

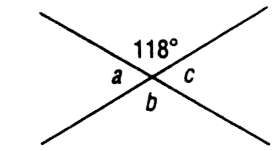
7. $\angle d$ and $\angle e$ are _____ angles.

8. $\angle c$ and _____ are corresponding angles.

9. _____ and _____ are corresponding angles.

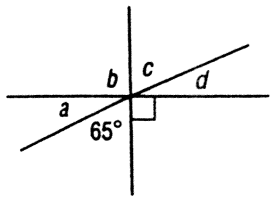
Calculate the missing measures.

10.



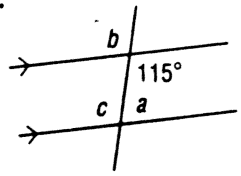
$\angle a =$ _____
$\angle b =$ _____
$\angle c =$ _____

11.



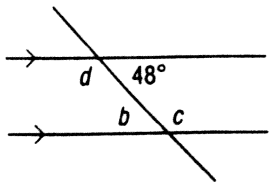
$\angle a =$ _____
$\angle b =$ _____
$\angle c =$ _____
$\angle d =$ _____

12.



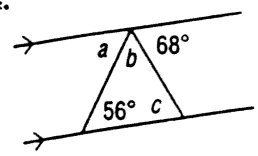
$\angle a =$ _____
$\angle b =$ _____
$\angle c =$ _____

13.



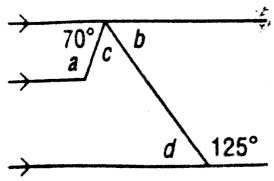
$\angle b =$ _____
$\angle c =$ _____
$\angle d =$ _____

14.



$\angle a =$ _____
$\angle b =$ _____
$\angle c =$ _____

15.



$\angle a =$ _____
$\angle b =$ _____
$\angle c =$ _____
$\angle d =$ _____