

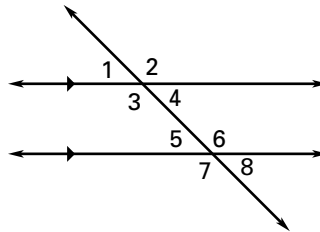
**LESSON**  
**3.2**

**Practice A**

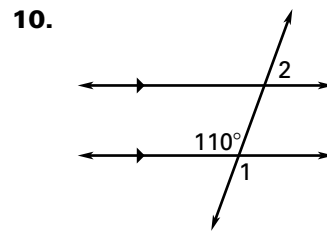
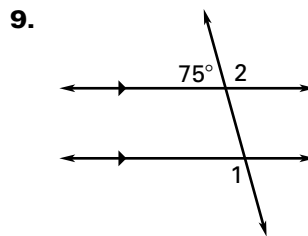
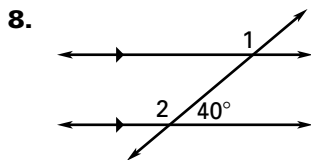
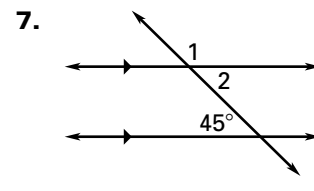
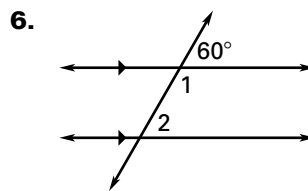
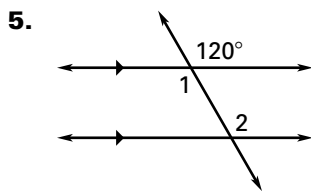
For use with pages 157–164

**What postulate or theorem justifies the statement about the diagram?**

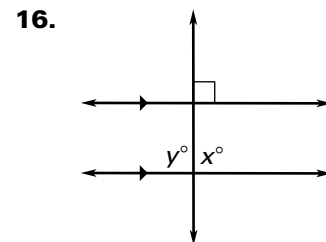
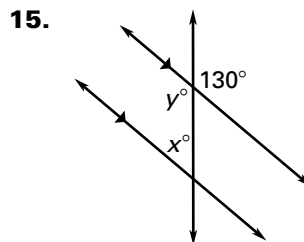
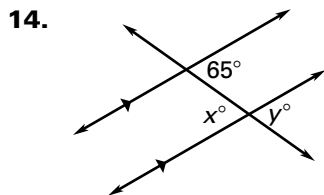
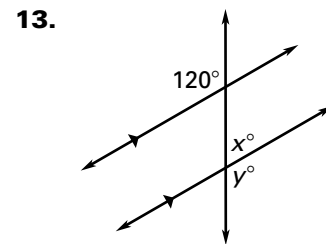
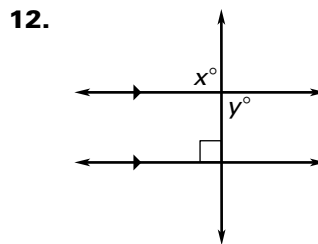
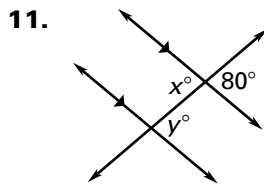
1.  $\angle 1 \cong \angle 5$
2.  $\angle 4$  and  $\angle 6$  are supplementary.
3.  $\angle 4 \cong \angle 5$
4.  $\angle 2 \cong \angle 7$



**Find  $m\angle 1$  and  $m\angle 2$ .**



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



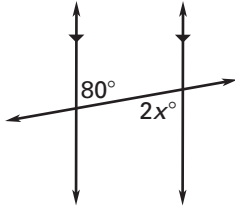
**LESSON**  
**3.2**

**Practice A** *continued*

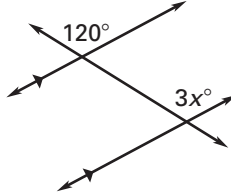
For use with pages 157–164

**Find the value of  $x$ .**

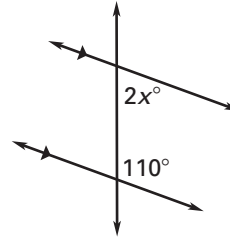
17.



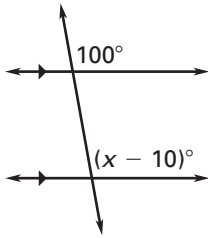
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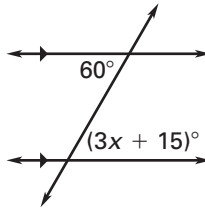
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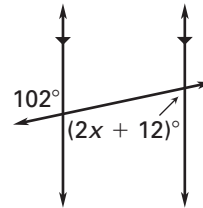
20.



21.



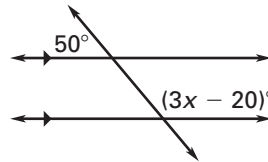
22.



23. **Multiple Choice** What is the value of  $x$  in the diagram?

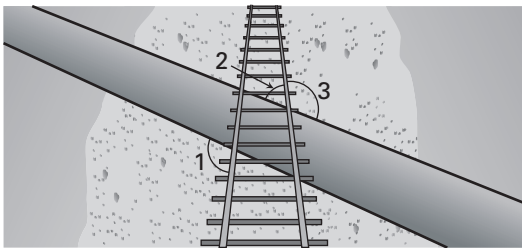
- A. 40
- C. 60

- B. 50
- D. 70



**In Exercises 24–27, use the diagram.**

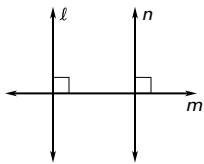
A hiking trail crosses a set of train tracks as shown in the diagram. The parallel edges of the hiking trail form angles 1, 2, and 3 with the parallel tracks.



- 24. If  $m\angle 1 = 135^\circ$ , what is  $m\angle 3$ ?
- 25. If  $m\angle 1 = 135^\circ$ , what is  $m\angle 2$ ?
- 26. If  $m\angle 2 = 40^\circ$ , what is  $m\angle 3$ ?
- 27. If  $m\angle 2 = 50^\circ$ , what is  $m\angle 1$ ?

## Lesson 3.1, continued

3.  $l$  seems to be parallel to  $n$ . If two lines are perpendicular to the same line, then they are parallel to each other.



4. a.  $\angle 11, \angle 17$  b.  $\angle 5, \angle 9$  c.  $\angle 8, \angle 12$   
d.  $\angle 9, \angle 18$  e.  $\angle 10, \angle 14$  f.  $\angle 4, \angle 10$   
g.  $\angle 11, \angle 15$  h.  $\angle 15$  5. III; 3 6. L; 50  
7. VII; 7 8. XX; 20 9. MIII; 1003

## Lesson 3.2

### Practice Level A

- Corresponding Angles Postulate
- Consecutive Interior Angles Theorem
- Alternate Interior Angles Theorem
- Alternate Exterior Angles Theorem
- $120^\circ; 120^\circ$  6.  $120^\circ; 60^\circ$  7.  $135^\circ; 45^\circ$   
8.  $140^\circ; 140^\circ$  9.  $105^\circ; 105^\circ$  10.  $110^\circ; 70^\circ$   
11. 80; 80 12. 90; 90 13. 60; 120 14. 65; 65  
15. 50; 130 16. 90; 90 17. 40 18. 40 19. 35  
20. 110 21. 15 22. 33 23. B 24.  $135^\circ$   
25.  $45^\circ$  26.  $140^\circ$  27.  $130^\circ$

### Practice Level B

- $50^\circ$ ; Corresponding Angles Postulate
- $135^\circ$ ; Consecutive Interior Angles Theorem
- $130^\circ$ ; Alternate Exterior Angles Theorem
- $123^\circ$ ; Alternate Interior Angles Theorem
- $60^\circ; 120^\circ$  6.  $120^\circ; 120^\circ$  7.  $100^\circ; 100^\circ$   
8.  $56^\circ; 56^\circ$  9.  $117^\circ; 63^\circ$  10.  $108^\circ; 72^\circ$   
11. 110; 110 12. 90; 90 13. 95; 85 14. 75; 75  
15. 106; 74 16. 90; 90 17. 65 18. 56 19. 48  
20. 23 21. 40 22. 77 23. Given  
24. Perpendicular lines form right angles.  
25. Definition of right angle 26. Given  
27. Corresponding Angles Postulate  
28. Definition of congruent angles  
29. Substitution Property of Equality  
30. Definition of right angle  
31. Perpendicular lines form right angles.

### Practice Level C

- $114^\circ$ ; Corresponding Angles Postulate
- $68^\circ$ ; Alternate Interior Angles Theorem
- $64^\circ$ ; Alternate Exterior Angles Theorem
- $113^\circ; 67^\circ$  5.  $46^\circ; 134^\circ$  6.  $79^\circ; 101^\circ$  7. 43  
8. 36 9. 18 10. 90 11. 23 12. 31 13. 19;  
98 14. 68; 32 15. 6; 35 16. 32; 64 17. 83; 20  
18. 20; 25 19. Given; Vertical Angles Theorem;  
Corresponding Angles Postulate; Transitive  
Property of Congruence  
20. Given; Alternate Exterior Angles Theorem;  
Given; Corresponding Angles Postulate; Transitive  
Property of Congruence

### Review for Mastery

- Using the Vertical Angles Congruence Theorem,  $m\angle 8 = 65^\circ$ . By the Corresponding Angles Postulate,  $m\angle 4 = 65^\circ$ . Because  $\angle 8$  and  $\angle 6$  are corresponding angles, by the Corresponding Angles Postulate, you know that  $m\angle 6 = 65^\circ$ . 2. Using the Vertical Angles Congruence Theorem,  $m\angle 3 = 115^\circ$ . By the Corresponding Angles Postulate,  $m\angle 7 = 115^\circ$ . Because  $\angle 3$  and  $\angle 1$  are corresponding angles, by the Corresponding Angles Postulate, you know that  $m\angle 1 = 115^\circ$ . 3. 68 4. 25 5. 12 6. 10  
7. 10 8. 5 9. 12 10. 16

### Problem Solving Workshop: Using Alternative Methods

- $115^\circ$ ; by the Alternate Exterior Angles Theorem 2.  $30^\circ$ ; by the Consecutive Interior Angles Theorem

### Challenge Practice

- $m\angle 1 = 42^\circ, m\angle 2 = 138^\circ, m\angle 3 = 138^\circ,$   
 $m\angle 4 = 42^\circ, m\angle 5 = 132^\circ, m\angle 6 = 48^\circ,$   
 $m\angle 7 = 48^\circ, m\angle 8 = 132^\circ, m\angle 9 = 90^\circ,$   
 $m\angle 10 = 90^\circ, m\angle 11 = 90^\circ, m\angle 12 = 90^\circ,$   
 $m\angle 13 = 132^\circ, m\angle 14 = 48^\circ, m\angle 15 = 48^\circ,$   
 $m\angle 16 = 132^\circ, m\angle 17 = 42^\circ, m\angle 18 = 138^\circ,$   
 $m\angle 19 = 138^\circ, m\angle 20 = 42^\circ$
- $m\angle 1 = 35^\circ, m\angle 2 = 145^\circ, m\angle 3 = 111^\circ,$   
 $m\angle 4 = 69^\circ, m\angle 5 = 111^\circ, m\angle 6 = 69^\circ,$   
 $m\angle 7 = 145^\circ, m\angle 8 = 35^\circ, m\angle 9 = 69^\circ,$   
 $m\angle 10 = 111^\circ, m\angle 11 = 69^\circ, m\angle 12 = 111^\circ,$   
 $m\angle 13 = 76^\circ, m\angle 14 = 104^\circ, m\angle 15 = 76^\circ,$   
 $m\angle 16 = 104^\circ, m\angle 17 = 104^\circ, m\angle 18 = 76^\circ,$   
 $m\angle 19 = 104^\circ, m\angle 20 = 76^\circ$