17. a.  $m \angle DAB = 64$ ,  $m \angle KAB = 32$ ,  $m \angle DKA = 32$  b. More information is needed 19. x = 30, y = 5 21. 1.  $k \parallel l$  (Given) 2.  $\angle 1 \cong \angle 8$  or  $m \angle 1 = m \angle 8$  (If  $2 \parallel$  lines are cut by a trans., then alt. int.  $\triangle$  are  $\cong$ .) 3.  $m \angle 8 + m \angle 7 = 180$  ( $\angle$  Add. Post.) 4.  $m \angle 1 + m \angle 7 = 180$  (Substitution Prop.) 5.  $\angle 1$  is supp. to  $\angle 7$  (Def. of supp.  $\triangle$ ) 23. a. 1.  $\overline{AB} \parallel \overline{DC}$ ;  $\overline{AD} \parallel \overline{BC}$  (Given) 2.  $\angle A$  is supp. to  $\angle B$ ;  $\angle C$  is supp. to  $\angle B$  (If  $2 \parallel$  lines are cut by a trans., then s-s. int.  $\triangle$  are supp.) 3.  $\angle A \cong \angle C$  (If  $2 \triangle$  are supp. of the same  $\angle$ , then the  $2 \triangle$  are  $\cong$ .) b. Yes, by the same reasoning as in part (a) 25. 60

### Mixed Review Exercises, Page 82

a. True
 b. If 2 lines form ≅ adj. △, then the lines are ⊥. c. True
 a. True
 b. If 2 lines are not skew, then they are ||. c. False
 a. True
 b. If two △ are supp., then the sum of their meas. is 180.
 c. True
 a. True
 b. If 2 planes do not intersect, then they are ||. c. True

## Written Exercises, Pages 87-88

1.  $\overline{AB} \parallel \overline{FC}$  3.  $\overline{AB} \parallel \overline{FC}$  5. none 7. none 9.  $\overline{AE} \parallel \overline{BD}$  11.  $\overline{AE} \parallel \overline{BD}$  13.  $\overline{AE} \parallel \overline{BD}$  15.  $\overline{FB} \parallel \overline{EC}$ ;  $\overline{AE} \parallel \overline{BD}$  17. 1. Given 2. Vert.  $\triangle$  are  $\cong$ . 3. Trans. Prop. 4. If 2 lines are cut by a trans. and corr.  $\triangle$  are  $\cong$ , then the lines are  $\parallel$ . 19. x = 35, y = 20 21.  $\angle 1 \cong \angle 4$ ;  $\angle 2 \cong \angle 5$  23. 1.  $k \perp t$ ;  $n \perp t$  (Given) 2.  $m \angle 1 = 90$ ;  $m \angle 2 = 90$  (Def. of  $\perp$  lines) 3.  $m \angle 1 = m \angle 2$  or  $\angle 1 \cong \angle 2$  (Substitution Prop.) 4.  $k \parallel n$  (If 2 lines are cut by a trans. and corr.  $\triangle$  are  $\cong$ , then the lines are  $\parallel$ .) 25. 1.  $\overline{BE} \perp \overline{DA}$ ;  $\overline{CD} \perp \overline{DA}$  (Given) 2.  $\overline{CD} \parallel \overline{BE}$  (In a plane, 2 lines  $\perp$  to the same line are  $\parallel$ .) 3.  $\angle 1 \cong \angle 2$  (If 2  $\parallel$  lines are cut by a trans., then alt. int.  $\triangle$  are  $\cong$ .) 27.  $m \angle RST = 110$  29. x = 50, y = 20 31. x = 12

### Self-Test 1, Page 89

 1. sometimes
 2. never
 3. always
 4. sometimes
 5. always
 6.  $\angle 3$ ,  $\angle 6$ ;  $\angle 4$ ,  $\angle 5$  

 7. Answers may vary;  $\angle 1$ ,  $\angle 5$ ;  $\angle 2$ ,  $\angle 6$ ;  $\angle 3$ ,  $\angle 7$ ;  $\angle 4$ ,  $\angle 8$  8.  $\angle 3$ ,  $\angle 5$  or  $\angle 4$ ,  $\angle 6$  9.  $\angle 4$ ;  $\angle 3$  

 10.  $\angle 2$ ,  $\angle 8$ ;  $\angle 4$ ,  $\angle 7$  11.  $\angle 2$ ,  $\angle 8$  12. 65, 115
 13.  $\overline{EB} \parallel \overline{DC}$  14. none
 15.  $\overline{AE} \parallel \overline{BD}$  

 16. one, one

# Written Exercises, Pages 97-99

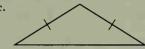
1. a.



b.



c.



3. not possible

5. 180

7. 95 9. 25 11. x = 30, y = 80 13. x = 40, y = 50 15. x = 40, y = 50 17. Yes, n = 5 19. 30, 60, 90 21.  $m \angle C > 60$  23. a. 22 b. 23 c.  $\angle ABD$  and  $\angle C$  are comps. of  $\angle CBD$ .

25. 1.  $\angle ABD \cong \angle AED$  (Given) 2.  $\angle A \cong \angle A$  (Refl. Prop.) 3.  $\angle C \cong \angle F$  (If  $2 \angle 6$  of one  $\triangle 6$  are  $\triangle 6$  to f another  $\triangle 6$ , then the third  $\triangle 6$  are  $\triangle 6$ .) 27. Given:  $\triangle ABC$ . Prove: ABC = 100 1 to ABC = 100 2. ABC = 100 2. ABC = 100 2. ABC = 100 3. ABC = 100 4 to ABC = 100 4. Through ABC = 100 4 to ABC = 100 5. If ABC = 100 4 ineq a given line.) 2. ABC = 100 4 ineq a given line.) 2. ABC = 100 5. ABC = 100 6. ABC = 100 6

#### Written Exercises, Pages 104-105

- **1.** 360; 360 **3.** 720; 360 **5.** 1440; 360 **7.** 360; yes **9.** 135 **11.** 120
- 15. not possible 17. 24 21. x = 36;  $\overline{AB} \parallel \overline{CD}$  23. 108 25. 14
- 27. a. Sketches may vary.

b. Yes

