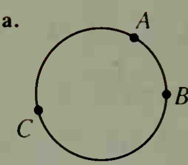
Written Exercises, Pages 341–343

1. 85 **3.** 150 **5.** 52 **7.** 30 **9. a.**



b. No

11. $m\overset{\frown}{BD}$: 34, 44; $m\angle COD$: 100, 88, 104, $p + q$; $m\angle CAD$: 50, 44, 50, $\frac{1}{2}(p + q)$

13. d. The opp. $\angle$s of inscr. quad. are supp.

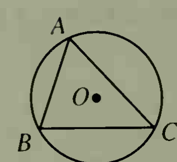
15. Key steps of proof: 1. Draw $\overline{OY}$. (Through any 2 pts. there is ex. 1 line.) 2. $m\angle WOY = m\overset{\frown}{WY} = 2n$ (Def. meas. of arc, Arc Add. Post.) 3. $m\angle WOY = m\angle Z + m\angle OYZ$ (Thm. 3-12) 4. $m\angle Z = m\angle OYZ$ (Isos. $\triangle$ Thm.) 5. $m\angle Z = n$ (Subst. and Div. Prop. =) **17.** $r \approx 4700$ km **19.** $r \approx 5300$ km **23.** ≈ 3800 km

Written Exercises, Pages 347–348

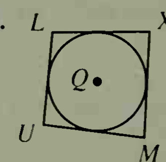
1. 8 **3.** $9\sqrt{2}$ **5.** 80 **7.** 24 **9.** $10\sqrt{5}$ **11.** $2\sqrt{21}$ cm **13.** $2\sqrt{21}$ cm **15.** 1. $\angle J \cong \angle K$ (Given) 2. $\overline{JZ} \cong \overline{KZ}$ (If 2 $\angle$s of $\triangle \cong$, sides opp. the $\angle$s are $\cong$.) 3. $\overset{\frown}{JZ} \cong \overset{\frown}{KZ}$ (In same $\odot$, $\cong$ chords have $\cong$ arcs.) **17.** $10\sqrt{3}$ **19.** 26 cm **21.** ≈ 74 **23.** If 2 $\odot$s are concentric and a chord of the outer $\odot$ is tan. to the inner circle, then the pt. of tan. is the midpt. of the chord. **25.** $18\sqrt{3}$ **27.** 2.8 cm

Self-Test 1, Page 349

1. a. $\overline{QB}$, $\overline{QC}$ **b.** $\overline{BC}$ **c.** $\overline{AC}$ or $\overline{BC}$, $\overleftrightarrow{AC}$ **2. a.**



b.



3. 15 **4.** two concentric $\odot$s
5. $4\sqrt{10}$ cm **6. a.** 50, 310
b. In same $\odot$, $\cong$ chords have $\cong$ arcs.

Written Exercises, Pages 354–356

1. $x = 30, y = 25, z = 15$ **3.** $x = 110, y = 100, z = 100$ **5.** $x = 50, y = 130, z = 65$ **7.** $x = 104, y = 104, z = 52$ **9.** $x = 50, y = 100, z = 35$ **11. a.** If the arcs between 2 chords are $\cong$, then the chords are $\parallel$. **b.** False, the chords may int. **13.** 1. Thm. 9-1; def. of $\perp$ lines 2. Def. of semicircle 3. Subst. **17.** $\triangle ADE \sim \triangle BCE$, $\triangle EDC \sim \triangle EAB$ **19.** $x = 80$, $m\angle D = 20$ **21.** $x = 10$, $m\angle A = 55$ **23.** rect.; $m\overset{\frown}{AB} = 120$ and $m\overset{\frown}{AQ} = 60$, so $\overset{\frown}{BAQ}$ is semicir. and $\angle BAQ$ is rt. $\angle$. Similarly, $\angle AQP$, $\angle QPB$, and $\angle PBA$ are rt. $\angle$s, so $AQPB$ is rect. **29.** $\frac{ab}{c}$

Mixed Review Exercises, Page 357

1. $\overline{LM}$ **2.** $\overleftrightarrow{LM}$ **3.** $\overline{NP}$ **4.** 14 **5.** $360 - x$ **6.** 6

Written Exercises, Pages 359–361

1. 90 **3.** 25 **5.** 55 **7.** 35 **9.** 90 **11.** 60 **13.** 30 **15.** 30 **17.** 40 **19.** 90 **21.** 115 **23.** 100, 90, 86, 84 **27.** $b - a = c$ **29.** Key steps of proof: 1. $m\angle ABP = \frac{1}{2}m\overset{\frown}{AP}$ (Thm. 9-7) 2. $m\angle Q = \frac{1}{2}(m\overset{\frown}{AB} - m\overset{\frown}{PC})$ (Thm. 9-10) 3. $m\angle Q = \frac{1}{2}(m\overset{\frown}{AC} - m\overset{\frown}{PC})$ (Subst.) 4. $m\angle Q = \frac{1}{2}m\overset{\frown}{AP}$ (Arc Add. Post.) **31.** $m\overset{\frown}{CE} = 3m\overset{\frown}{BD}$

Written Exercises, Pages 364–366

1. 10 **3.** $\sqrt{21}$ **5.** 6 **7.** 8 **9.** 5 **11.** 1. $\overline{UT}$ is tan. to $\odot O$ and $\odot P$. (Given) 2. $UV \cdot UW = (UT)^2$, $UX \cdot UY = (UT)^2$ (Thm. 9-13) 3. $UV \cdot UW = UX \cdot UY$ (Subst.) **13.** 4 or 12 **15.** 6 **17.** 9 **19.** 4 **21. a.** Pythag. Thm. **c.** Thm. 9-13 **23.** 20 m **25.** 1. $AX \cdot XB = PX \cdot XQ$, $CX \cdot XD = PX \cdot XQ$ (Thm. 9-11) 2. $AX \cdot XB = CX \cdot XD$ (Trans. Prop.) **27.** $2\sqrt{10}$

Self-Test 2, Page 367

1. 40 **2.** 150 **3.** 82 **4.** 9 **5.** $x = 70, y = 50$ **6.** 35 **7.** 10 **8.** 12