Pg. 767 (#6-8), (#12-19)

Pg. 776 (#6-10) , (#12-15)

Pg. 784 (#6-18)

Pg. 785 (#20-25 skip 22)

Pg. 788 (#1-8)

Practice and Problem-Solving Exercises

6. 120
7. 47
8. 30
9. 253.0 km
10. 113.1 km
11. 178.9 km
12. 4.8
13. 3.6 cm
14. 8 in.
15. no; $5^2 + 15^2 \neq 16^2$
16. yes; $2.5^2 + 6^2 = 6.5^2$
17. yes; $6^2 + 8^2 = 10^2$
18. 78 cm
19. 14.2 in.

Answers

Lesson Check

1. 50; $\angle COD \cong \angle AOB$ (Vert. $\measuredangle$ are $\cong$), so $\overset{\frown}{CD} \cong \overset{\frown}{AB}$ because $\cong$ central $\measuredangle$ have $\cong$ arcs. Therefore, $m\overset{\frown}{CD} = m\overset{\frown}{AB}$.

2. $\overset{\frown}{CA} \cong \overset{\frown}{BD}$ because in a circle $\cong$ chords have $\cong$ arcs.

3. The distances are equal because in a circle $\cong$ chords are equidistant from the center.

4. A radius is *not* a chord because one of its endpoints is not on the circle. A diameter *is* a chord because both of its endpoints are on the circle.

5. Chords $\overline{SR}$ and $\overline{QP}$ are equidistant from the center, so their lengths must be equal.

Practice and Problem-Solving Exercises

6. $\overset{\frown}{BC} \cong \overset{\frown}{YZ}$, $\overline{BC} \cong \overline{YZ}$

7. Answers may vary. Sample: $\overset{\frown}{ET} \cong \overset{\frown}{GH} \cong \overset{\frown}{JN} \cong \overset{\frown}{ML}$; $\overline{ET} \cong \overline{GH} \cong \overline{JN} \cong \overline{ML}$; $\angle TFE \cong \angle HFG$; $\angle JKN \cong \angle MKL$

8. 14

9. 8

10. 10

11. The center is at the intersection of $\overline{GH}$ and $\overline{KM}$, because if a chord is the $\perp$ bis. of another chord, then the first chord is a diameter; two diameters intersect at the center of a circle.

12. $CE = ED$, $\overset{\frown}{BC} \cong \overset{\frown}{BD}$

Answers

Lesson Check

1. $\overset{\frown}{BD}$
2. $\angle D$
3. $\angle A$ and $\angle C$ are suppl., and $\angle B$ and $\angle D$ are suppl.
4. Sample answer: For inscribed $\angle ABC$, B is the vertex and A, B, and C are points on the circle. The intercepted arc of $\angle ABC$ consists of points A, C, and all the points on the circle in the interior of $\angle ABC$.
5. $\angle A$ is not inscribed in a semicircle.

Practice and Problem-Solving Exercises

6. 58
7. 180
8. $a = 218$, $b = 109$
9. $a = 54$, $b = 30$, $c = 96$
10. $a = 112$, $b = 120$, $c = 38$
11. $a = 101$, $b = 67$, $c = 84$, $d = 80$
12. $x = 36$, $y = 36$
13. $a = 85$, $b = 47.5$, $c = 90$
14. $a = 50$, $b = 90$, $c = 90$
15. $p = 90$, $q = 122$
16. 123
17. $x = 65$, $y = 130$
18. $e = 65$, $f = 130$
19. Rectangle; opposite $\measuredangle$ are $\cong$ (because figure is $\square$) and suppl. (because opp. $\measuredangle$ intercept arcs whose measures sum to 360). $\cong$ suppl. $\measuredangle$ are rt. $\measuredangle$, so the inscribed $\square$ must be a rectangle.

20a. 96
b. 55
c. 77
d. 154
21a. 40
b. 50
c. 40
d. 40
e. 65
22. Isosc. trapezoid; answers may vary. Sample: For inscribed trapezoid $ABCD$, $\angle A$ must be suppl. to $\angle C$ (Corollary 3 to Thm. 12-11), and $\angle C$ must be suppl. to $\angle B$ (same-side int. $\measuredangle$ of parallel lines are suppl). So $\angle A \cong \angle B$, and the trapezoid must be isosc.
23. $a = 26$, $b = 64$, $c = 42$
24. $a = 22$, $b = 78$, $c = 156$
25. $a = 30$, $b = 60$, $c = 62$, $d = 124$, $e = 60$
26. $\odot O$ with inscribed $\angle ABC$ (given); $m\angle ABO = \frac{1}{2}m\overset{\frown}{AP}$ and $m\angle OBC = \frac{1}{2}m\overset{\frown}{PC}$ (Inscribed $\angle$ Thm., Case I); $m\angle ABO + m\angle OBC = m\angle ABC$ ($\angle$ Add. Post.); $\frac{1}{2}m\overset{\frown}{AP} + \frac{1}{2}m\overset{\frown}{PC} = m\angle ABC$ (Subst. Prop.); $\frac{1}{2}(m\overset{\frown}{AP} + m\overset{\frown}{PC}) = m\angle ABC$ (Distr. Prop.); $\frac{1}{2}m\overset{\frown}{AC} = m\angle ABC$ (Arc Add. Post.)

Answers

Mid-Chapter Quiz

1. 76 cm

2. 48 in.

3. 51 m

4. 68 cm

5. 24

6. 5

7. 8

8. 7

9. $w = 104$, $x = 22$, $y = 108$

10. $a = 30$, $b = 42$, $c = 80$, $d = 116$

11. $w = 105$, $x = 75$, $y = 210$

12. $a = 140$, $b = 70$, $c = 47.5$

13. 154

14. 120

15. $\odot A$ with $\overline{BC} \cong \overline{DE}$, $\overline{AF} \perp \overline{BC}$ and $\overline{AG} \perp \overline{DE}$ (given); $\overline{AF} \cong \overline{AG}$ ($\cong$ chords in a $\odot$ are equidistant from