Answers to Cumulative Reviews

Chapters 1–4

1. QR, PR 2. coplanar 3. F 4. skew 5. ABE, EBC 6. straight 7. parallel 8. right 9. BXD 10. trapezoid 11. 33 12. a. 12 b. 2 13. 47 14. 1620 15. 66
16. a. If a $\triangle$ is equilateral, then the sides of the $\triangle$ are $\cong$. b. If the sides of a $\triangle$ are $\cong$, then the $\triangle$ is equilateral. c. If a $\triangle$ is not equilateral, then the sides of the $\triangle$ are not $\cong$. d. If the sides of a $\triangle$ are not $\cong$, then the $\triangle$ is not equilateral 17. Yes 18. Yes 19. No 20. Yes 21. No 22. Yes 23. No
24. 1. Given 2. In a plane, 2 lines $\perp$ to the same line are $\parallel$. 3. If 2 $\parallel$ lines are cut by a trans., then alt. int. $\angle$s are $\cong$. 4. Vert. $\angle$s are $\cong$. 5. Given 6. AAS Thm. 7. Corr. parts of $\cong$ $\triangle$s are $\cong$. 8. Def. of segment bisector 25. 3, 2 26. 12 27. 2 28. 10 29. 5 30. 12 31. 3; 23 32. $67\frac{1}{2}$ 33. 8
34. 1. $\overline{AB} \parallel \overline{DE}$, $\overline{BC} \parallel \overline{EF}$ (Given) 2. $\angle BAC \cong \angle EDF$; $\angle BCA \cong \angle EFD$ (If 2 $\parallel$ lines are cut by a trans., then corr. $\angle$s are $\cong$.) 3. $AD + DC = AC$; $DC + CF = DF$ (Seg. Add. Post.) 4. $\overline{AD} \cong \overline{CF}$ ($AD = CF$) (Given) 5. $AC = CF + DC$; $AC = DF$ (Subst. Prop.) 6. $\triangle ABC \cong \triangle DEF$ (ASA) 7. $\angle B = \angle E$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 35. 1. $\triangle QRT \cong \triangle VST$ (Given) 2. $\angle RQT \cong \angle SVT$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 3. $\overleftrightarrow{PV} \parallel \overleftrightarrow{QR}$ (If 2 lines are cut by a trans. and alt. int. $\angle$s are $\cong$, then the lines are $\parallel$.) 4. $\overline{PS} \parallel \overline{QR}$ ($\overline{PS}$ lies on $\overleftrightarrow{PV}$.) 5. S is the midpt. of $\overline{PV}$ (Given) 6. $\overline{PS} \cong \overline{SV}$ (Def. of midpt.) 7. $\overline{SV} \cong \overline{QR}$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 8. $\overline{PS} \cong \overline{QR}$ (Trans. Prop.) 9. Quad. $PQRS$ is a $\square$ (If one pair of opp. sides of a quad. are both $\cong$ and $\parallel$, then the quad. is a $\square$.) 36. 1. $\overline{AD} \cong \overline{AE}$, $\overline{PX} \cong \overline{QX}$ (Given) 2. $\angle 1 \cong \angle 2$; $\angle 6 \cong \angle 5$ (Isosceles $\triangle$ Thm.) 3. $\angle 3 \cong \angle 1$; $\angle 2 \cong \angle 4$ (Vert. $\angle$s are $\cong$.) 4. $\angle 3 \cong \angle 4$ (Trans. Prop.) 5. $\overline{PD} \cong \overline{EQ}$ (Given) 6. $\triangle PDB \cong \triangle QEC$ (ASA) 7. $\overline{BD} \cong \overline{CE}$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 37. 1. $\overline{DC} \cong \overline{FC}$, $\overline{DE} \cong \overline{FE}$ (Given) 2. $\overline{EC} \cong \overline{EC}$ (Reflex. Prop.) 3. $\triangle ECD \cong \triangle ECF$ (SSS) 4. $\angle D \cong \angle F$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 5. $\overline{DA} \cong \overline{FB}$ (Given) 6. $\triangle DAC \cong \triangle FBC$ (SAS) 38. 1. $\angle 1 \cong \angle 2$; $\angle 3 \cong \angle 4$ (Given) 2. $\overline{XE} \cong \overline{XD}$, $\overline{BX} \cong \overline{AX}$ (Isosceles $\triangle$ Thm. Converse) 3. $AX + XE = AE$; $BX + XD = BD$ (Seg. Add. Post.) 4. $AE = BX + XD$, $AE = BD$ (Subst. Prop.) 5. $\overline{AB} \cong \overline{AB}$ (Reflex. Prop.) 6. $\triangle EAB \cong \triangle DBA$ (SAS) 7. $\angle EBA \cong \angle DAB$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 8. $\overline{CA} \cong \overline{CB}$ (Isosceles $\triangle$ Thm. Converse) 39. 1. $\angle A \cong \angle B$; $\overline{AC} \cong \overline{BC}$ (Given) 2. $\angle ACE \cong \angle BCF$ (Vert. $\angle$s are $\cong$.) 3. $\triangle ACF \cong \triangle BCF$ (SAS) 4. $\overline{EC} \cong \overline{FC}$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 5. $\angle CFE \cong \angle CEF$ (Isosceles $\triangle$ Thm.) 6. $\overline{ED} \cong \overline{FD}$ (Given) 7. $\triangle CDE \cong \triangle CDF$ (SAS) 8. $\angle CDE \cong \angle CDF$ (Corr. parts of $\cong$ $\triangle$s are $\cong$.) 9. $\overline{CD} \perp \overline{EF}$ (If 2 lines form $\cong$ adjacent $\angle$s, then the lines are $\perp$.)

Chapters 5–8

1. False 2. False 3. True 4. True 5. False 6. False 7. True 8. $-\frac{1}{8}$ 9. $3\sqrt{10}$ 10. $\sqrt{74}$ 11. $9\sqrt{3}$ 12. $2\sqrt{5}$ 13. 6 14. 9.2 15. 30.1 16. 53 17. 4.3
18. Draw a seg. $\overline{AB}$, using A and B as centers and AB as the radius, swing two arcs; label their int. C, draw $\overline{CA}$, use Constr. 3 to bisect $\angle CAB$, each of the two resulting $\angle$s is a 30° $\angle$.
19. 1. The meas. of an inscribed $\angle = \frac{1}{2}$ the meas. of its intercepted arc. 2. Subst. Prop. 3. Vert. $\angle$s are $\cong$. 4. AA $\sim$ Thm. 5. Corr. sides of $\sim$ $\triangle$s are in proportion. 6. Prop. of proportions 20. 1:4 21. Use Constr. 1 to construct a seg. $\overline{XY}$ with length a; use Const. 5 to construct line l $\perp$ to $\overline{XY}$ at X; use Const. 1 to construct a seg. $\overline{XZ}$ with length b along l; draw $\overline{ZY}$. 22. Use Const. 13 23. 30 24. 20 25. 130 26. 90 27. 4 28. 6 29. 9 30. 36 31. 20 32. 8 33. 1. $\overleftrightarrow{BE} \parallel \overleftrightarrow{AF} \parallel \overleftrightarrow{CG}$ (Given) 2. $\frac{BD}{DC} = \frac{EF}{FG}$ (If 3 $\parallel$ lines int. 2 trans., then they divide the trans. proportionally.) 3. $\overrightarrow{AF}$ bisects $\angle BAD$ (Given) 4. $\frac{BD}{BC} = \frac{AB}{AC}$ (If a ray bis. an $\angle$ of a $\triangle$, then it divides the opp. side into segments prop. to the other 2 sides.) 5. $\frac{AB}{AC} = \frac{EF}{FG}$ (Subst. Prop.)
34. 1. $\overrightarrow{AB}$ is tangent to $\odot O$ at B (Given) 2. $AB \perp BO$ (If a line is tangent to a $\bigcirc$, then the line is $\perp$ to the radius drawn to the pt. of tangency.) 3. $m\angle ABO = 90$ (Def. of $\perp$ lines, Def. of rt. $\angle$) 4. $m\angle BCD = 90$ (An $\angle$ inscribed in a semicircle is a rt. $\angle$; Def. of rt. $\angle$) 5. $m\angle ABO = m\angle BCD$ (Subst. Prop.) 6. $\angle BAO \cong \angle CBD$ (Given) 7. $\triangle BAO \cong \triangle CBD$ (AA $\sim$ Thm.) 35. 1. $\overline{AB}$ is tangent to $\odot P$ at B; $\overline{BC}$ is tangent to $\odot O$ at B (Given) 2. In $\odot O$, $m\angle CBD = \frac{1}{2}m\widehat{BSD}$; in $\odot P$, $m\angle ABD = \frac{1}{2}m\widehat{BRD}$ (The meas. of an $\angle$ formed by a chord and