

Answers for Lesson 4-1, pp. 200–202 Exercises

1. $\angle CAB \cong \angle DAB$;
 $\angle C \cong \angle D$;
 $\angle ABC \cong \angle ABD$;
 $\overline{AC} \cong \overline{AD}$; $\overline{AB} \cong \overline{AB}$;
 $\overline{CB} \cong \overline{DB}$
2. $\angle GEF \cong \angle JHI$;
 $\angle GFE \cong \angle JIH$;
 $\angle EGF \cong \angle HJI$;
 $\overline{GE} \cong \overline{JH}$; $\overline{EF} \cong \overline{HI}$;
 $\overline{FG} \cong \overline{IJ}$
3. \overline{BK} 4. \overline{CM} 5. \overline{ML} 6. $\angle B$
7. $\angle C$ 8. $\angle J$ 9. $\triangle KJB$ 10. $\triangle CLM$
11. $\triangle JBK$ 12. $\triangle MCL$ 13. E, K, G, N
14. $\overline{PO} \cong \overline{SI}$; $\overline{OL} \cong \overline{ID}$;
 $\overline{LY} \cong \overline{DE}$; $\overline{PY} \cong \overline{SE}$
15. $\angle P \cong \angle S$; $\angle O \cong \angle I$;
 $\angle L \cong \angle D$; $\angle Y \cong \angle E$
16. 33 in. 17. 54 in. 18. 105 19. 77
20. 36 in. 21. 34 in. 22. 75 23. 103
24. Yes; $\angle RTK \cong \angle UTK$, $\angle R \cong \angle U$ (Given) $\angle RKT \cong \angle UKT$
If two $\sideset{}{<}{/}$ of a \triangle are \cong to two $\sideset{}{<}{/}$ of another \triangle , the third $\sideset{}{<}{/}$
are \cong . $\overline{TR} \cong \overline{TU}$, $\overline{RK} \cong \overline{UK}$ (Given) $\overline{TK} \cong \overline{TK}$
(Reflexive Prop. of \cong) $\triangle TRK \cong \triangle TUK$ (Def. of $\cong \triangle$)
25. No; the corr. sides are not \cong .
26. No; corr. sides are not necessarily \cong .
27. Yes; all corr. sides and $\sideset{}{<}{/}$ are \cong .
28. $\overline{AB} \cong \overline{DC}$, $\overline{BC} \cong \overline{AD}$ are given. $\overline{AC} \cong \overline{AC}$ by the Refl.
Prop. $\angle B \cong \angle D$ is given, and by the Alt. Int. \angle Thm.,
 $\angle BCA \cong \angle DAC$ and $\angle BAC \cong \angle DCA$. So
 $\triangle ABC \cong \triangle CDA$ by the def. of $\cong \triangle$.

Answers for Lesson 4-1, pp. 200–202 Exercises (cont.)

29. B
30. $x = 15; t = 2$ 31. 5
32. $m\angle A = m\angle D = 20$ 33. $m\angle B = m\angle E = 21$
34. $BC = EF = 8$ 35. $AC = DF = 19$
36. Answers may vary. Sample: It is important that $PACH \cong OLDE$ for the patch to completely fill the hole.
37. Answers may vary. Sample: She could arrange them in a neat pile and pull out the ones of like sizes.
38. $\triangle JYB \cong \triangle XCH$ 39. $\triangle BCE \cong \triangle ADE$
40. $\triangle TPK \cong \triangle TRK$ 41. $\triangle JLM \cong \triangle NRZ;$
 $\triangle JLM \cong \triangle ZRN$
42. Answers may vary. Sample: The die is a mold that is used to make items that are all the same size.
43. Answers may vary. Sample: $\triangle TKR \cong \triangle MJL:$
 $\overline{TK} \cong \overline{MJ}; \overline{TR} \cong \overline{ML}; \overline{KR} \cong \overline{JL}; \angle TKR \cong \angle MJL;$
 $\angle TRK \cong \angle MLJ; \angle KTR \cong \angle JML$
44. $\overline{PR} \cong \overline{TQ}, \overline{PS} \cong \overline{QS}$ (Given), $\overline{RS} \cong \overline{TS}$ (def. of bisect),
 $\angle PSR \cong \angle QST$ (Vert. \sphericalangle s are \cong .), $\angle SPR \cong \angle SQT$ (Alt. Int.
 \angle Thm.), $\angle PRS \cong \angle QTS$ (If 2 \sphericalangle s of a \triangle are \cong to 2 \sphericalangle s of
another \triangle , the third \sphericalangle s are \cong .) So $\triangle PRS \cong \triangle QTS$ by the
def. of $\cong \triangle$.
45. $\angle A \cong \angle D, \angle B \cong \angle E$ (Given), $m\angle A + m\angle B + m\angle C =$
 $180, m\angle D + m\angle E + m\angle F = 180$ (\triangle - \angle Sum Thm.), $m\angle A +$
 $m\angle B + m\angle C = m\angle D + m\angle E + m\angle F$ (Subst. Prop.), $m\angle D$
 $+ m\angle E + m\angle C = m\angle D + m\angle E + m\angle F$ (Subst. Prop.),
 $m\angle C = m\angle F$ (Subtr.)

Answers for Lesson 4-1, pp. 200–203 Exercises (cont.)

46. $KL = 4; LM = 3; KM = 5$

47. 2; either $(3, 1)$ or $(3, -7)$

48. a. 15

b.

 4	 4	 4	 4
 8	 8	 4	 8
 4	 1	 8	 4
 8	 8	 1	