

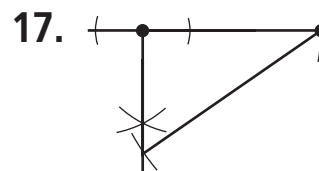
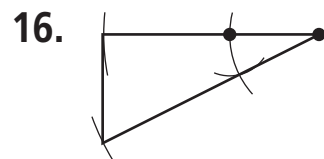
## Answers for Lesson 4-6, pp. 237–239 Exercises

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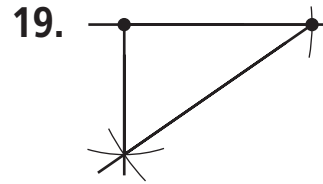
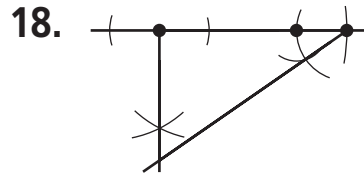
1.  $\triangle ABC \cong \triangle DEF$  by HL. Both  $\triangle$  are rt.  $\triangle$ ,  $\overline{AC} \cong \overline{DF}$ , and  $\overline{CB} \cong \overline{FE}$ .
2.  $\triangle LMP \cong \triangle OMN$  by HL. Both  $\triangle$  are rt.  $\triangle$  because vert.  $\angle$ s are  $\cong$ ;  $\overline{LP} \cong \overline{NO}$ , and  $\overline{LM} \cong \overline{OM}$ .
3.  $\angle T$  and  $\angle Q$  are rt.  $\angle$ s.
4.  $\overline{RX} \cong \overline{RT}$  or  $\overline{XV} \cong \overline{TV}$
5.
  - a.  $\cong$  suppl.  $\angle$ s are rt.  $\angle$ s
  - b. Def. of rt.  $\triangle$
  - c. Given
  - d. Reflexive Prop. of  $\cong$
  - e. HL
6. Given that  $\angle D$  and  $\angle B$  are right  $\angle$ s,  $\triangle ADC$  and  $\triangle CBA$  are right  $\triangle$  by the def. of rt.  $\triangle$ .  $\overline{AC} \cong \overline{AC}$  by the Reflexive Prop. of  $\cong$ , and  $\overline{AD} \cong \overline{CB}$  is given. Therefore,  $\triangle ADC \cong \triangle CBA$  by HL.
7.
  - a. Given
  - b. Def. of  $\perp$
  - c.  $\triangle MLJ$  and  $\triangle KJL$  are rt.  $\triangle$ .
  - d. Given
  - e.  $\overline{LJ} \cong \overline{LJ}$
  - f. HL

**Answers for Lesson 4-6, pp. 237–239 Exercises (cont.)**

8. Given that  $\overline{HV} \perp \overline{GT}$  and  $\overline{GH} \cong \overline{TV}$ , then  $\triangle IGH$  and  $\triangle ITV$  are right  $\triangle$ s by the def. of rt.  $\triangle$ . It is given that  $I$  is the midpoint of  $\overline{HV}$ , so  $\overline{HI} \cong \overline{VI}$  by the def. of midpt. Therefore,  $\triangle IGH \cong \triangle ITV$  by the HL Thm.
9. HL; each rt.  $\triangle$  has a  $\cong$  hyp. and side.
10.  $x = 3; y = 2$
11.  $x = -1; y = 3$
12. whether the 7-yd side is the hyp. or a leg
13. It is given that  $\overline{RS} \cong \overline{TU}$ ,  $\overline{RS} \perp \overline{ST}$ ,  $\overline{TU} \perp \overline{UV}$ , and that  $T$  is the midpoint of  $\overline{RV}$ .  $\triangle RST$  and  $\triangle TUV$  are both right triangles by the definition of a right triangle.  $\overline{RT} \cong \overline{TV}$  by the definition of midpoint. Therefore,  $\triangle RST \cong \triangle TUV$  by HL.
14. 1.  $\overline{JM} \cong \overline{WP}$  (given)  
 2.  $\overline{JP} \parallel \overline{MW}$  (given)  
 3.  $\overline{JP} \perp \overline{PM}$  (given)  
 4.  $\triangle JPM$  and  $\triangle PMW$  are rt.  $\triangle$ s (def. of rt.  $\triangle$ )  
 5.  $\overline{PM} \cong \overline{PM}$  (Reflex. Prop. of  $\cong$ )  
 6.  $\triangle JPM \cong \triangle PMW$  (HL)
15.  $\overline{PS} \cong \overline{PT}$  so  $\angle S \cong \angle T$  by the Isosc.  $\triangle$  Thm.  
 $\angle PRS \cong \angle PRT$ .  $\triangle PRS \cong \triangle PRT$  by AAS.

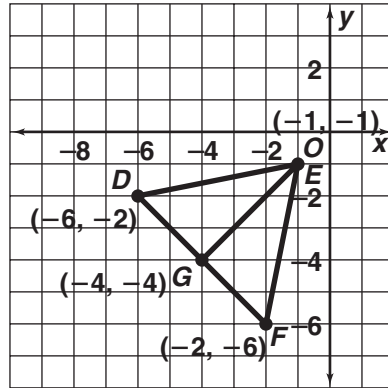


Answers for Lesson 4-6, pp. 237–239 Exercises (cont.)



20. 1.  $\overline{EB} \cong \overline{DB}$ ;  $\angle A$  and  $\angle C$  are rt.  $\angle$ s. (Given)  
 2.  $\triangle BEA$  and  $\triangle BDC$  are rt.  $\triangle$ s. (Def. of rt.  $\triangle$ )  
 3.  $B$  is the midpt. of  $\overline{AC}$ . (Given)  
 4.  $\overline{AB} \cong \overline{BC}$  (Def. of midpt.)  
 5.  $\triangle BEA \cong \triangle BDC$  (HL)
21. 1.  $\overline{LO}$  bisects  $\angle MLN$ ,  $\overline{OM} \perp \overline{LM}$ ,  $\overline{ON} \perp \overline{LN}$ , (Given)  
 2.  $\angle M$  and  $\angle N$  are rt.  $\angle$ s (Def. of  $\perp$ )  
 3.  $\angle MLO \cong \angle NLO$  (Def. of  $\angle$  bis.)  
 4.  $\angle M \cong \angle N$  (All rt.  $\angle$ s are  $\cong$ .)  
 5.  $\overline{LO} \cong \overline{LO}$  (Reflexive Prop. of  $\cong$ )  
 6.  $\triangle LMO \cong \triangle LNO$  (AAS)
22. Answers may vary. Sample: Measure 2 sides of the  $\triangle$  formed by the amp. and the platform's corner. Since the  $\triangle$  will be  $\cong$  by HL or SAS, the  $\angle$ s are the same.

23. a.



b. slope of  $\overline{DG} = -1$ ; slope of  $\overline{GF} = -1$ ; slope of  $\overline{GE} = 1$

c.  $\angle EGD$  and  $\angle EGF$  are rt.  $\sphericalangle$ s.

d.  $DE = \sqrt{26}$ ;  $FE = \sqrt{26}$

e.  $\triangle EGD \cong \triangle EGF$  by HL. Both  $\triangle$ s are rt.  $\triangle$ s,  
 $\overline{DE} \cong \overline{FE}$ , and  $\overline{EG} \cong \overline{EG}$ .

24. An HA Thm. is the same as AAS with AAS corr. to the rt.  $\angle$ , an acute  $\angle$ , and the hyp.

25. Since  $\overline{BE} \perp \overline{EA}$  and  $\overline{BE} \perp \overline{EC}$ ,  $\triangle AEB$  and  $\triangle CEB$  are both rt.  $\triangle$ s.  $\overline{AB} \cong \overline{BC}$  because  $\triangle ABC$  is equilateral, and  $\overline{BE} \cong \overline{BE}$ .  $\triangle AEB \cong \triangle CEB$  by HL.

26. No;  $\overline{AB} \cong \overline{CB}$  because  $\triangle AEB \cong \triangle CEB$ , but  $\overline{AC}$  doesn't have to be  $\cong$  to  $\overline{AB}$  or to  $\overline{CB}$ .