

13.  $\angle C \cong \angle F$ ; Given a congruent angle and a congruent side, a second corresponding angle that is adjacent to the known side must also be congruent in the triangles to apply ASA.
14.  $\overline{BC} \cong \overline{DF}$  or  $\overline{AC} \cong \overline{EF}$ ; Given two pairs of congruent angles, a side adjacent to either angle but not included between them must also be congruent to apply AAS.
15.  $\overline{AC} \cong \overline{EF}$ ; Given a congruent angle and a congruent side, the second side that is adjacent to the known angle must be also be congruent to apply SAS.
16.  $\overline{AC} \cong \overline{EF}$  or  $\overline{AB} \cong \overline{ED}$ ; Given a pair of right triangles with congruent hypotenuses, a corresponding leg must also be congruent to use HL.
17.  $GL = 9$  and  $HK = 15$ ; To apply the HL Theorem, a hypotenuse and a leg must be congruent in right triangles to show that the triangles are congruent. The hypotenuse  $GH = 15$ , so the corresponding hypotenuse must be congruent; therefore  $HK \cong GH$  and  $HK = 15$ . The leg  $JK = 9$ , so the corresponding leg must be congruent; therefore  $JK \cong GL$  and  $GL = 9$ .
18.  $DE = DB$  and  $EF = 12$ , or  $AB = 33$ ; To apply the HL Theorem, a hypotenuse and a leg must be congruent in right triangles to show that the triangles are congruent. The hypotenuses must be congruent; therefore  $DE \cong BC$ . Either pair of corresponding legs may be congruent. Using the leg  $AC = 12$ , the corresponding leg must be congruent; therefore  $EF \cong AC$  and  $EF = 12$ . Or using the leg  $DF = 33$ , the corresponding leg must be congruent; therefore  $AB \cong DF$  and  $AB = 33$ .
19. Since  $\overline{AC} \perp \overline{DB}$ ,  $\angle ADB$  and  $\angle BDC$  are right angles.  $\overline{BD} \cong \overline{BD}$  by the Reflexive Property. Therefore, given  $\overline{AC} \cong \overline{CB}$ ,  $\triangle ABD \cong \triangle CBD$  by the HL Theorem.
20. Given that  $\overline{EF} \cong \overline{GH}$  and  $G$  is the midpoint of  $\overline{EJ}$  by the definition of midpoint,  $\overline{EG} \cong \overline{GJ}$ . Since  $\triangle EGF$  and  $\triangle GJH$  are right triangles, by the HL Theorem,  $\triangle EGF \cong \triangle GJH$ .