

Name \_\_\_\_\_

Date \_\_\_\_\_

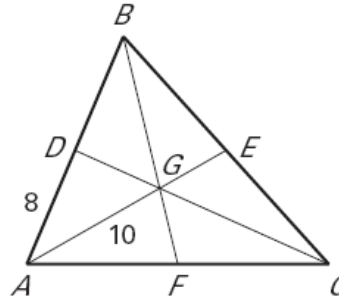
LESSON 5.4

**Practice B**

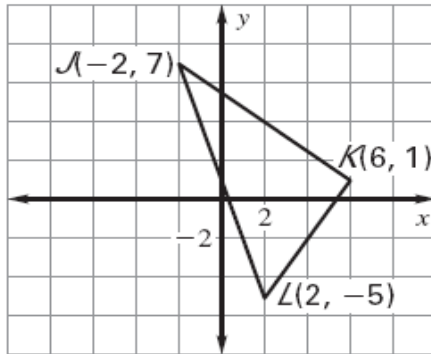
For use with pages 318–327

$G$  is the centroid of  $\triangle ABC$ ,  $AD = 8$ ,  $AG = 10$ , and  $CD = 18$ . Find the length of the segment.

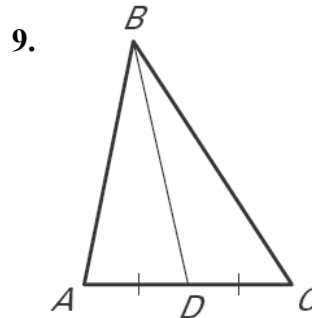
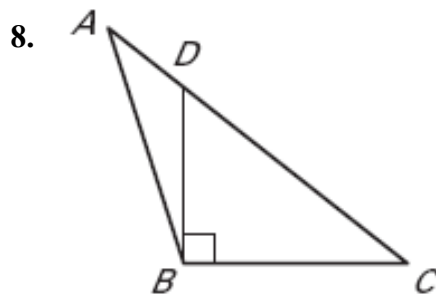
1.  $\overline{BD}$
2.  $\overline{AB}$
3.  $\overline{EG}$
4.  $\overline{AE}$
5.  $\overline{CG}$
6.  $\overline{DG}$



7. Use the graph shown.
  - a. Find the coordinates of  $M$ , the midpoint of  $\overline{JK}$ . Use the median  $\overline{LM}$  to find the coordinates of the centroid  $P$ .
  - b. Find the coordinates of  $N$ , the midpoint of  $\overline{JL}$ . Verify that  $KP = \frac{2}{3} KN$ .



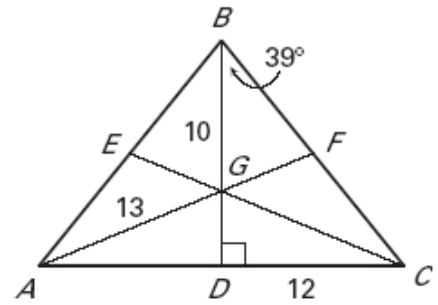
Is  $\overline{BD}$  a perpendicular bisector of  $\triangle ABC$ ? Is  $\overline{BD}$  a median? an altitude?



**Find the measurements.**

10. Given that  $AB = BC$ , find  $AD$  and  $m\angle ABC$ .

11. Given that  $G$  is the centroid of  $\triangle ABC$ , find  $FG$  and  $BD$ .



**Copy and complete the statement for  $\triangle HJK$  with medians  $\overline{HN}$ ,  $\overline{JL}$ , and  $\overline{KM}$ , and centroid  $P$ .**

12.  $PN = \underline{\hspace{2cm}} HN$

13.  $PL = \underline{\hspace{2cm}} JP$

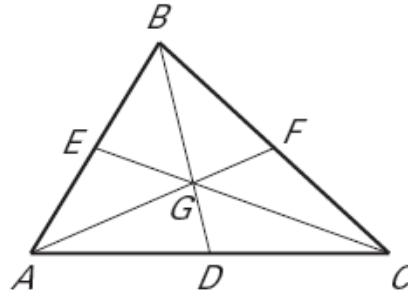
14.  $KP = \underline{\hspace{2cm}} KM$

**Point  $G$  is the centroid of  $\triangle ABC$ . Use the given information to find the value of  $x$ .**

15.  $CG = 3x + 7$  and  $CE = 6x$

16.  $FG = x + 8$  and  $AF = 9x - 6$

17.  $BG = 5x - 1$  and  $DG = 4x - 5$



18. **House Decoration** You are going to put a decoration on your house in the triangular area above the front door. You want to place the decoration on the centroid of the triangle. You measure the distance from point  $A$  to point  $B$  (see figure). How far down from point  $A$  should you place the decoration? *Explain.*

