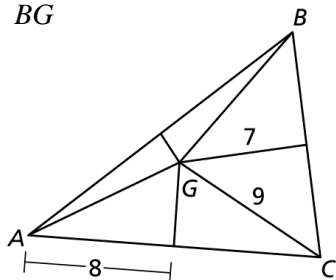


# 6.2

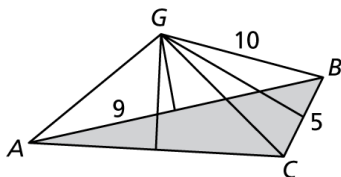
## Practice A

In Exercises 1–3, the perpendicular bisectors of  $\triangle ABC$  intersect at point  $G$ , or the angle bisectors of  $\triangle XYZ$  intersect at point  $P$ . Find the indicated measure. Tell which theorem you used.

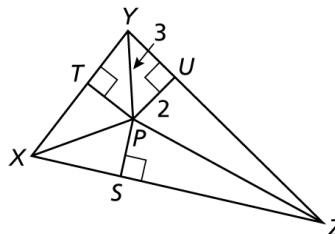
1.  $BG$



2.  $CG$



3.  $PS$



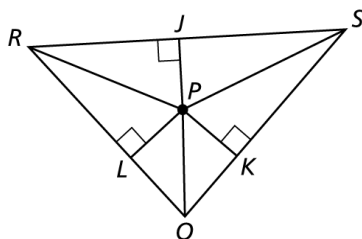
In Exercises 4 and 5, find the coordinates of the circumcenter of the triangle with the given vertices.

4.  $J(6, 0), K(0, 0), L(0, 4)$

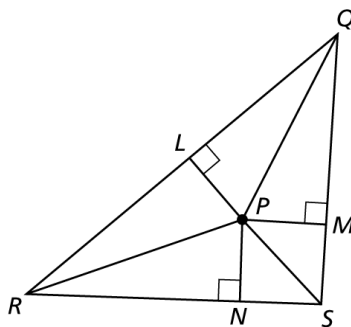
5.  $U(0, 0), V(-4, 0), W(-6, 6)$

In Exercises 6 and 7,  $P$  is the incenter of  $\triangle QRS$ . Use the given information to find the indicated measure.

6.  $PJ = 4x - 8, PL = x + 7$   
Find  $PK$ .

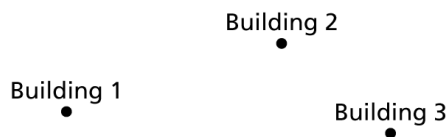


7.  $PN = 6x + 2, PM = 8x - 14$   
Find  $PL$ .



8. Draw an obtuse isosceles triangle. Find the circumcenter  $C$ . Then construct the circumscribed circle.

9. A cellular phone company is building a tower at an equal distance from three large apartment buildings. Explain how you can use the figure at the right to determine the location of the cell tower.



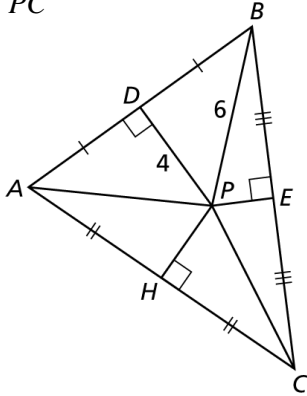
10. Your friend says that it is impossible for the circumcenter of a triangle to lie outside the triangle. Is your friend correct? Explain your reasoning.

# 6.2

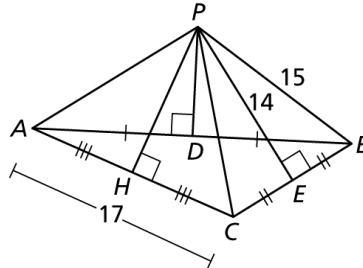
## Practice B

In Exercises 1–3, find the indicated measure. Tell which theorem you used.

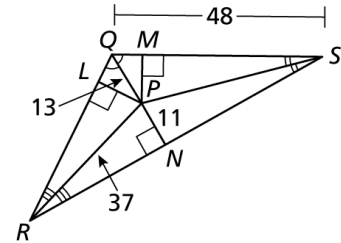
1.  $PC$



2.  $AP$



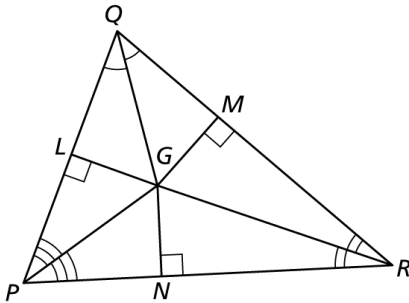
3.  $MP$



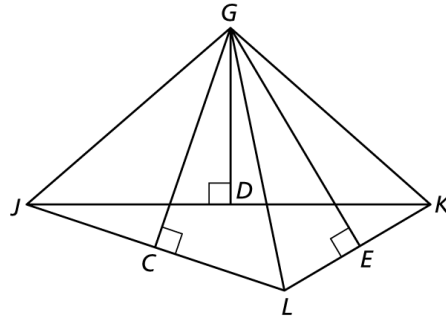
4. Find the coordinates of the circumcenter of the triangle with the vertices  $A(4, 12)$ ,  $B(14, 6)$ , and  $C(-6, 2)$ .

In Exercises 5 and 6, use the diagram and the given information to find the indicated measures.

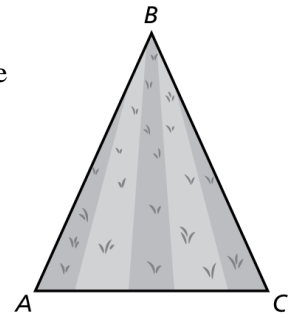
5.  $LG = 6x - 14$ ,  $NG = -3x + 22$   
Find  $MG$  and  $NG$ .



6.  $GL = 4x - 2$ ,  $GE = 3x + 2$ ,  $GK = 2x + 8$   
Find  $GJ$  and  $GE$ .



7. You are using a rotary sprinkler to water the triangular lawn.
- Explain how to locate the sprinkler the same distance from each side of the triangular lawn.
  - Explain how to locate the sprinkler the same distance from each vertex of the triangular lawn.
  - Which is closer to vertex  $B$ , the *incenter* or the *circumcenter*? Explain your reasoning.



8. Explain when the circumcenter of a triangle lies outside the triangle.

9. In the figure at the right, what value of  $x$  makes  $G$  the incenter of  $\triangle JKL$ ?

