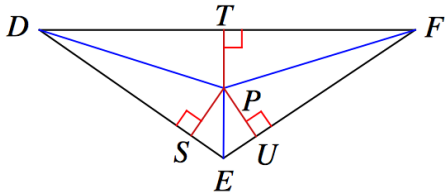


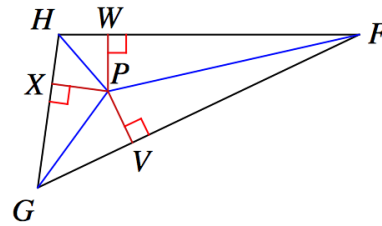
## 6.2 Bisectors of Triangles

Each figure shows a triangle with its three angle bisectors intersecting at point P.

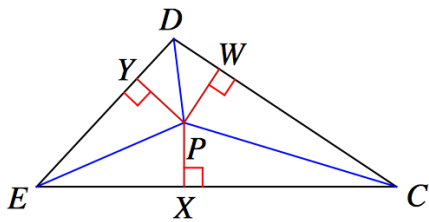
1.  $PT = 3$ . Find  $PU$ .



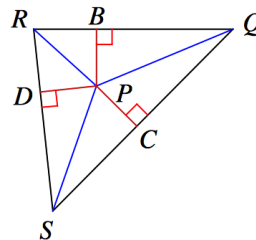
2. Find  $PV$  if  $PW = 7$ .



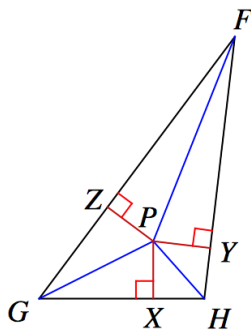
3. Find  $PW$  if  $PX = 5$ .



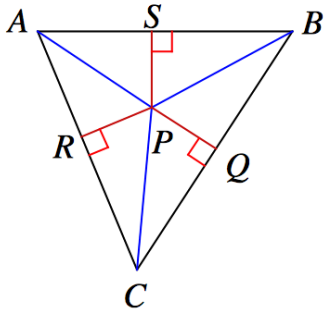
4. Find  $PD$  if  $PC = 8$ .



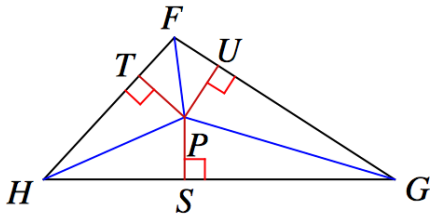
5.  $PY = 2$  and  $HP = 3$ .  
Find  $HY$ .



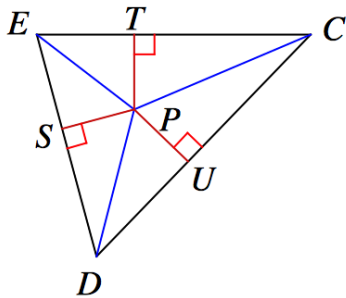
6. Find  $AP$  if  $PQ = 1$   
and  $AR = 2$ .



7.  $PT = 5$  and  $FP = 7$ .  
Find  $FT$ .

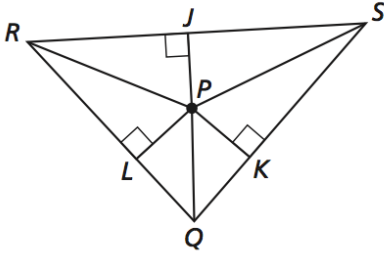


8.  $PT = 3$  and  $CP = 8$ .  
Find  $CT$ .

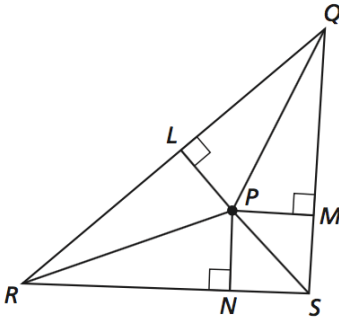


Use the diagram and the given information to find the indicated measures.

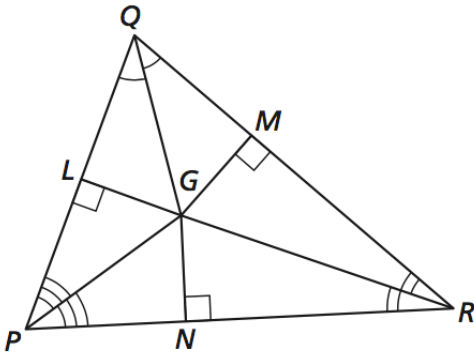
9.  $PJ = 4x - 8$ ,  $PL = x + 7$   
Find  $PK$ .



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



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



# 6.2 Puzzle Time

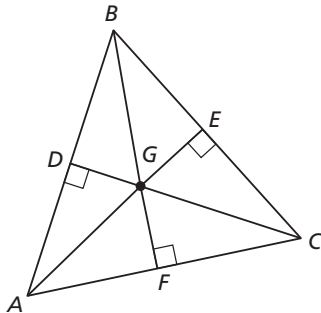
## What Did The Computer Do At Lunchtime? It . . .

Write the letter of each answer in the box containing the exercise number.

**Complete the sentence.**

1. When three or more lines, rays, or segments intersect in the same point, they are called \_\_\_\_\_ lines, rays, or segments.
2. The circumcenter of a triangle is \_\_\_\_\_ from the vertices of the triangle.
3. The angle \_\_\_\_\_ of a triangle are congruent.
4. The \_\_\_\_\_ of the triangle is the point of intersection of angle bisectors.
5. The incenter of a triangle always lies \_\_\_\_\_ the triangle.

Find the indicated measure using the diagram. The perpendicular bisectors are at points *D*, *E*, and *F*. Angle bisectors are at *A*, *B*, and *C*.



6.  $AG = 13$ ,  $BD = 5$ ; Find  $GD$ .
7.  $GF = 8$ ,  $GC = 17$ ; Find  $AF$ .
8.  $G$  is the incenter,  $GD = 4x - 1$ , and  $GE = 3x + 5$ ; Find  $GF$ .

6	1	5		4		3	8	2	7
---	---	---	--	---	--	---	---	---	---

**Answers**

H. 12

U. circumcenter

D. inside

T. equiangular

N. measurements

A. concurrent

M. 5

R. outside

E. 15

Y. 23

E. 6

B. bisectors

O. congruent

S. 18

T. equidistant

A. incenter