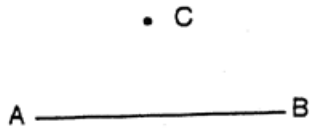
Constructions #4

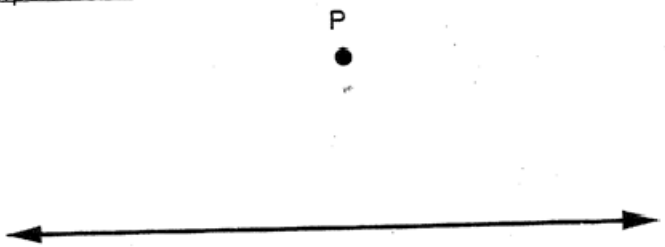
TO CONSTRUCT A PERPENDICULAR TO A LINE FROM A POINT OFF THE LINE

OBJECTIVE: CONSTRUCT A PERPENDICULAR TO $\overleftrightarrow{AB}$ PASSING THROUGH **C**.



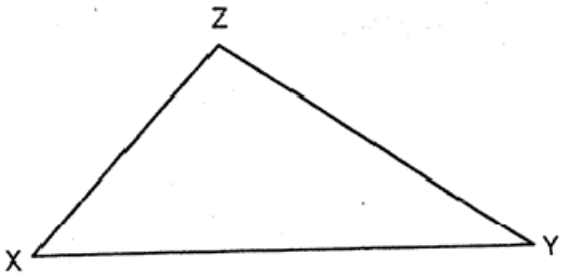
1.

2. Construct a perpendicular to the line from point P.

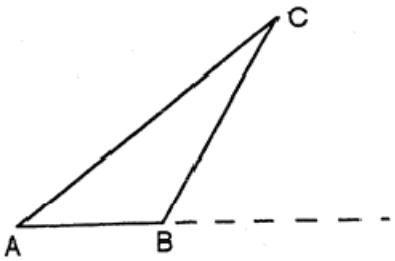


The altitude of a triangle is a segment drawn from a vertex of a triangle that is perpendicular to the opposite side or the extension of the opposite side.

3. Construct the altitude from Z to side XY.



4. Construct the altitude from point C to the extension of AB.



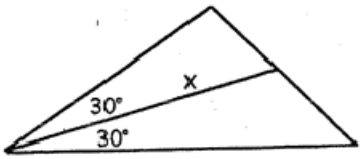
Review

Remember the definitions for line segments associated with triangles

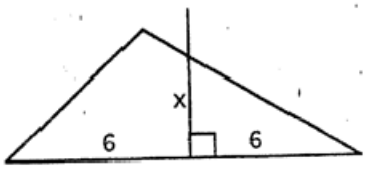
1) Median - a segment that joins the vertex of a triangle to the midpoint of the opposite side
2) Altitude - a segment drawn from a vertex of a triangle that is perpendicular to the opposite side
3) Angle Bisector - a segment that bisects an angle of a triangle and extends to the opposite side
4) Perpendicular Bisector - a line that is perpendicular to a side of a triangle and passes through the midpoint of that side

Name line segment x in the following triangles:

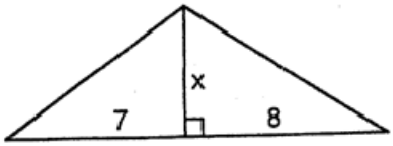
1.



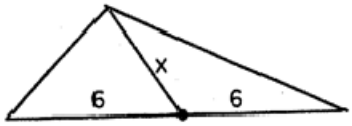
2.



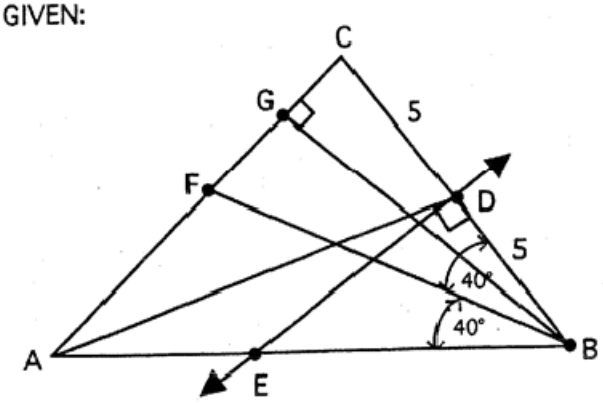
3.



4.



5. GIVEN:



NAME THESE SEGMENTS

a) $\overline{AD}$ _____

b) $\overleftrightarrow{DE}$ _____

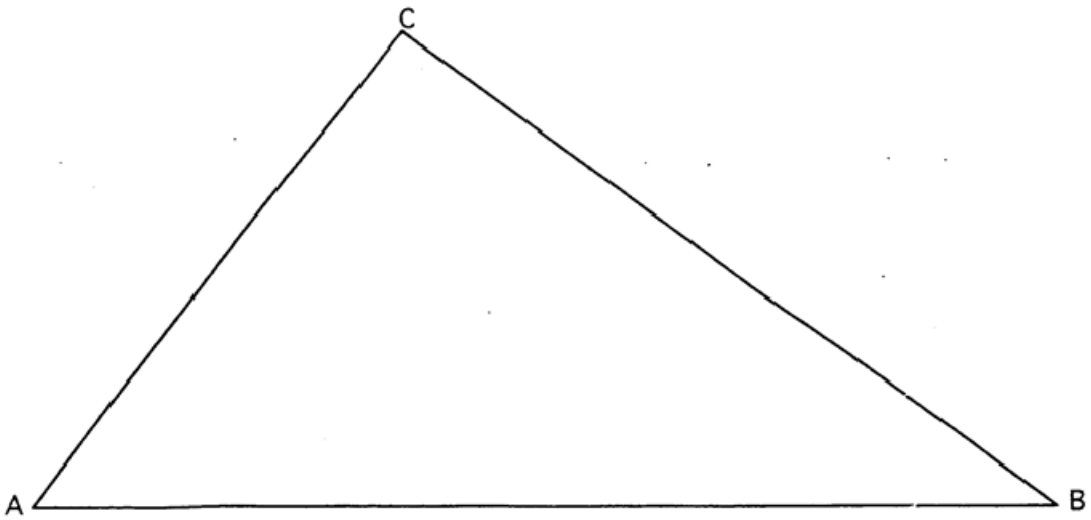
c) $\overline{BF}$ _____

d) $\overline{BG}$ _____

A Construction Problem

Given Δ ABC, construct the intersections of the

3 medians, label point of intersection G
3 altitudes, label point of intersection H
3 perpendicular bisectors, label point of intersection O



1. What relationship exists between points G, H, and O?

2. What fraction of $\overline{OH}$ is $\overline{OG}$?