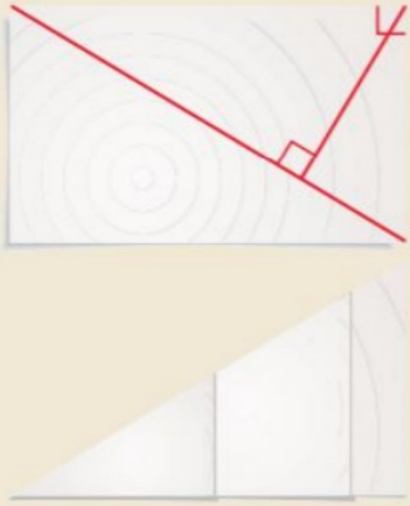
Developing Concepts

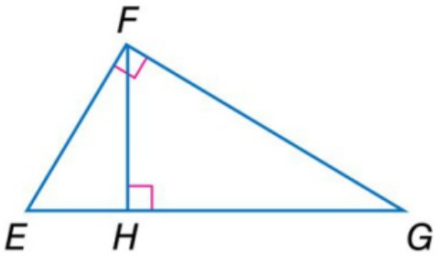
Investigating Similar Right Triangles

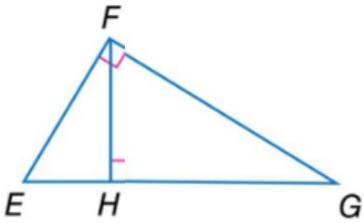
1. Cut an index card along one of its diagonals.
2. On one of the right triangles, draw an altitude from the right angle to the hypotenuse. Cut along the altitude to form two right triangles.
3. You should now have three right triangles. Compare the triangles. What special property do they share? Explain.

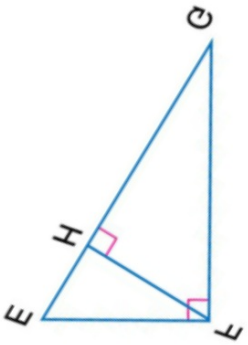


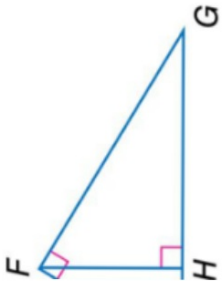
***Key Vocabulary: Diagonal, altitude, hypotenuse, right triangle, similar, congruent**

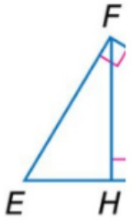
***Draw out the three similar triangles.**



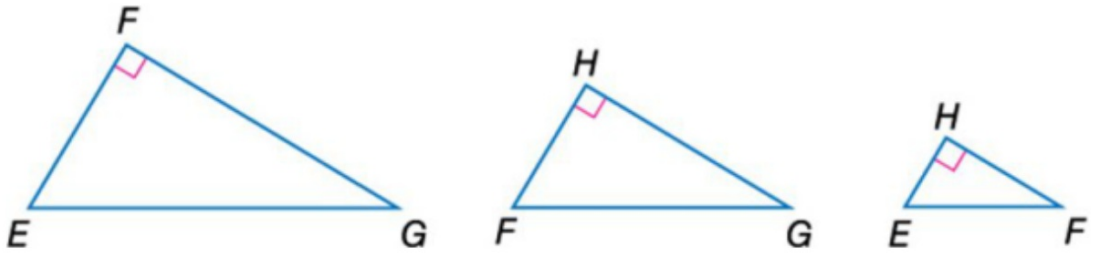








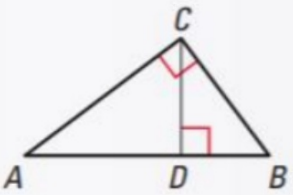
***Write a triangle similarity statements.**



$\Delta EGF \sim \Delta FGH \sim \Delta EFH.$

THEOREM 9.1

If the altitude is drawn to the hypotenuse of a right triangle, then the two triangles formed are similar to the original triangle and to each other.



$\triangle CBD \sim \triangle ABC$, $\triangle ACD \sim \triangle ABC$, and $\triangle CBD \sim \triangle ACD$