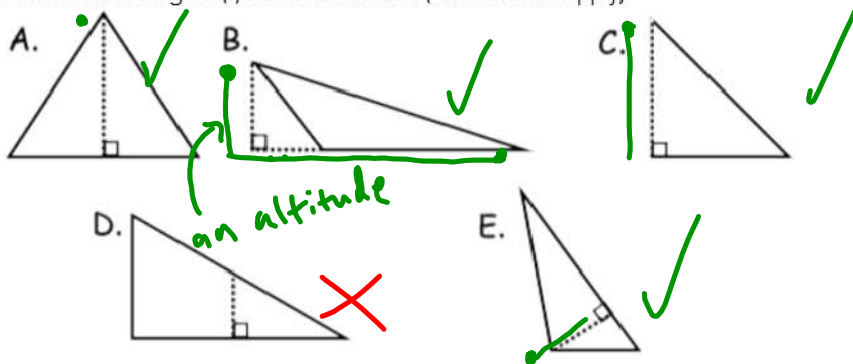10-13-16

Geometry CC – Mr. Valentino

Unit 3 Lesson 3: Orthocenter and Incenter

Name: _____

Date: _____ Period: _____
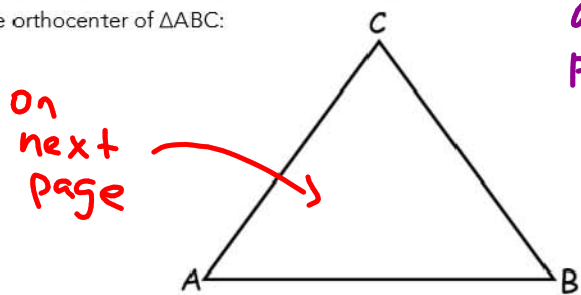
Aim: What is the orthocenter and incenter of a triangle?

Do Now: Which diagram(s) show an altitude? (Circle all that apply)

A. ✓   B. ✓   C. ✓

an altitude

D. ✗   E. ✓

Orthocenter – An altitude of a triangle is a segment from any vertex perpendicular to the line containing the opposite side. The altitudes of a triangle are concurrent (they intersect in one common point). This point is called the ORTHO-CENTER
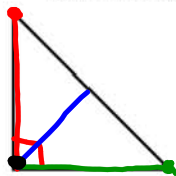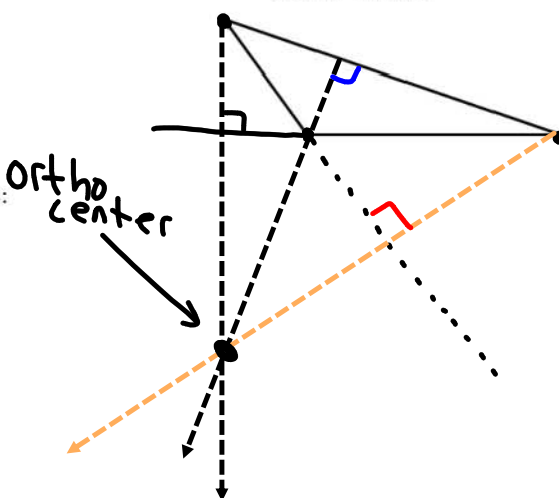
Sketch the orthocenter of △ABC:

On next page →

Do you think the orthocenter will always be inside the triangle?

Right Triangle   Obtuse Triangle
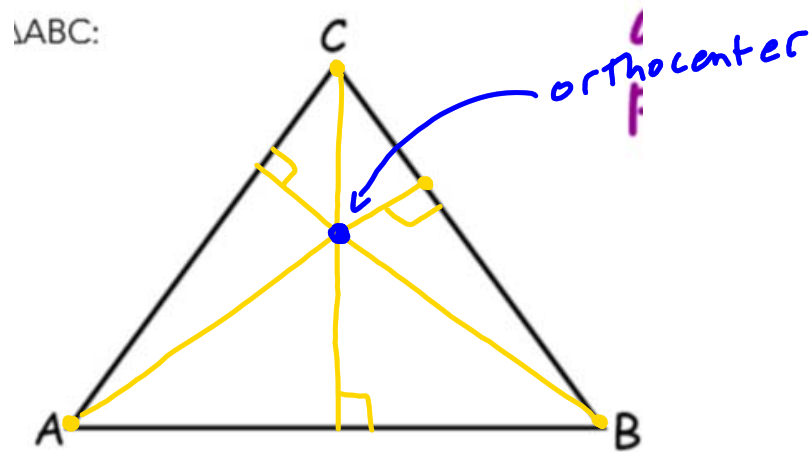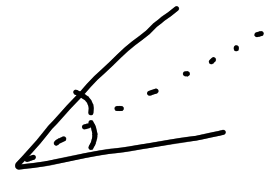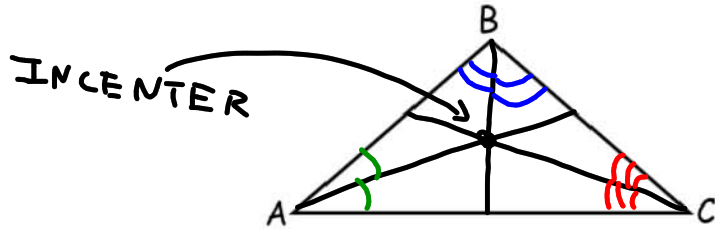
orthocenter

Summarizing Orthocenter Locations:

Acute – inside

Right – on

Obtuse – Outside

ΔABC:

orthocenter

Incenter – The angle bisectors of the angles of a triangle are concurrent (they intersect in one common point). The point of concurrency of the angle bisectors is called the INCENTER.

Sketch the incenter of ΔABC by drawing 3 angle bisectors.

INCENTER

Practice Problems! Here we go.

Give the name the point of concurrency for each of the following.

1. Angle Bisectors of a Triangle _____

2. Medians of a Triangle _____

3. Altitudes of a Triangle _____

4. Complete the following chart. Write if the point of concurrency is *inside*, outside, or on the triangle.

	Acute Δ	Obtuse Δ	Right Δ
Incenter			
Centroid			
Orthocenter			