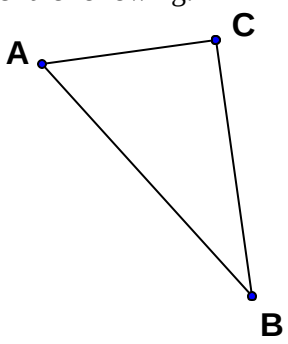
Chapter 2 – Applications

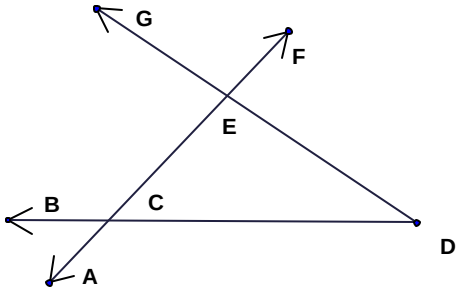
Problem 1 (2.1 – page 67) Refer to $\triangle ABC$ in which $m\angle C = 90^\circ$ and $AC \neq BC \neq AC$. Answer the following:

a) Classify the triangle using its angles.
b) Classify the triangle using its sides.
c) What angle is included by $\overline{AC}$ and $\overline{BC}$?
d) What angle is opposite $\overline{AC}$?
e) What side is included by $\angle A$ and $\angle B$?
f) What side is opposite $\angle A$?
g) What is the hypotenuse of the triangle?
h) What are the legs of the triangle?



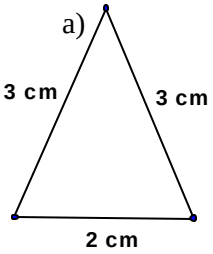
Problem 2 (2.1 - #33 – 39) Refer to the given figure. Answer *true* or *false.*

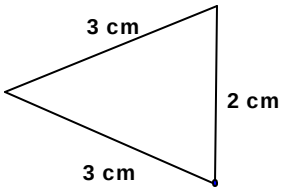
a) $\angle CED$ is an interior angle of $\triangle EDC$.
b) $\angle FED$ is an exterior angle of $\triangle EDC$.
c) $\angle ACB$ is an interior angle of $\triangle EDC$.
d) $\angle CED$ is an interior adjacent angle to $\angle GEF$
e) $m\angle ACB = m\angle ECD$
f) Exterior angle $\angle BCE$ is supplementary to interior angle $\angle ECD$



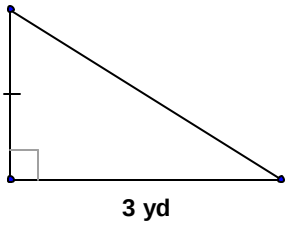
Problem 3 (2.2 - #1, 3) Decide whether the triangles given are congruent. Explain your reasoning.

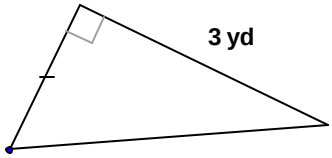
a)





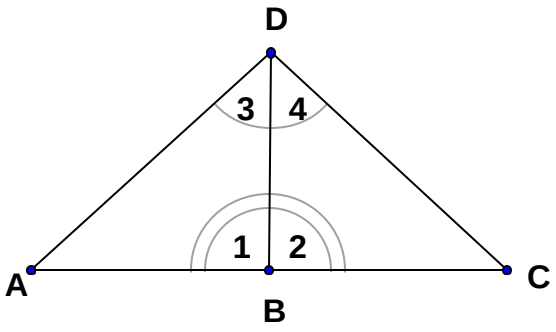
b)





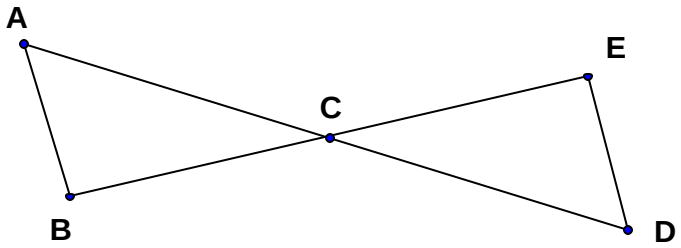
Problem 4 (2.2 - # 7)

Given $\angle 1 \cong \angle 2$
$\angle 3 \cong \angle 4$
Prove $\triangle ABD \cong \triangle CBD$



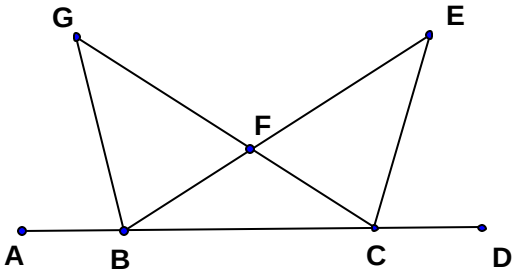
Problem 5 (2.2 - # 12)

Given: $\angle B$, $\angle E$ right angles
$\overline{AD}$ bisects $\overline{BE}$
Prove: $\triangle ABC \cong DEC$



Problem 6 (2.3 - #5)

Given: $\overline{BG} \cong \overline{CE}$
$\angle 1 \cong \angle 2$
Prove: $\angle G \cong \angle E$



Problem 7 (2.3 - #10)

Given $\overrightarrow{AC}$ bisects $\angle BAD$
$\overrightarrow{CA}$ bisects $\angle BCD$
Prove: $\angle B \cong \angle D$